NATIONAL ENERGY BOARD

SUPPLEMENT

ANNUAL REPORT 1991

National Energy Board Profile

The National Energy Board is an independent federal regulatory tribunal that was created by an Act of Parliament on 2 November 1959. Since its creation, the Board has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the *National Energy Board Act* include the granting of authorizations for the exportation of oil, natural gas and electricity, the certification of interprovincial and international pipelines and designated interprovincial and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, natural gas, and the by-products derived from oil and natural gas, as well as the demand for Canadian energy in Canada and in export markets.

The Board has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*. In addition, Board inspectors have been appointed safety officers by the Minister of Labour to administer *Part II* of the *Canada Labour Code*.

In April 1991, regulatory responsibilities of the Canada Oil and Gas Lands Administration for oil and gas exploration and development in frontier lands were transferred to the Board.

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Metric Conversion Tables

The **National Energy Board** uses the International System of Units (SI). The energy units most commonly referred to in this report are the gigajoule (GJ) and the petajoule (PJ). A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules. On average, a city the size of Toronto uses a petajoule of energy for all uses (heat,light, transportation, etc.) about every 15 hours.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

metre (m)	=	3.28 feet
kilometre (km)	=	0.62 mile
millimetre (mm)	=	0.039 inch
cubic metre (m^3) of oil	=	6.3 barrels
cubic metre (m^3) of natural gas	=	35.3 cubic feet
litre (L)	=	0.22 Imperial gallon
kilogram (kg)	=	2.20 pounds
gigajoule (GJ)	=	0.95 thousand cubic feet of natural gas at 1000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
petajoule (PJ)	=	one million gigajoules

Abbreviations

gigajoule (GJ)	=	10^9 J
terajoule (TJ)	=	10^{12} J
petajoule (PJ)	=	10^{15} J
exajoule (EJ)	=	10^{18} J
kilowatt (KW)	=	10^3 watts
megawatt (MW)	=	10^3 KW
megawatt hour (MW.h)	=	10^3 KW.h
gigawatt hour (GW.h)	=	10^6 KW.h
terawatt hour (TW.h)	=	10^9 KW.h

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Foreword

This supplement to the National Energy Board's 1991 Annual Report provides year-end information on the trade in Canadian oil, natural gas and electricity, and contains statistics on energy supply and demand as well as data on oil and gas exploration and development in Canada.

The report also includes a number of tables giving detailed statistics on exports and imports of oil, natural gas and electricity by company.

Information on energy trade included in this supplement was not available at the time the Board's 1991 annual report was published in April of this year. Copies of the annual report are available by contacting the Board at the address and telephone number provided on the Profile page.

Calgary, Alberta
August, 1992

Energy Developments

International Oil Prices

Over the past 20 years, periodic episodes in world oil markets have had important implications for Canadian energy supply and demand. Most recently, the 1990 invasion of Kuwait caused a sharp, although brief, rise in world crude oil prices in the latter half of 1990. Following Iraq's expulsion from Kuwait, world crude prices declined to about pre-invasion levels.

In 1991, the West Texas Intermediate (WTI) crude price at Cushing, Oklahoma, averaged $US 21.50 per barrel, 12 percent below its 1990 average of $US 24.50. On January 16, 1991, the first day of Allied bombing of Iraq, the WTI spot price reached its peak for the year at $US 32.00 per barrel. However, by January 31 the price had fallen to $US 21.55. Over the remainder of 1991, WTI ranged, on a monthly basis, between $US 19.50 and $US 23.50 per barrel.

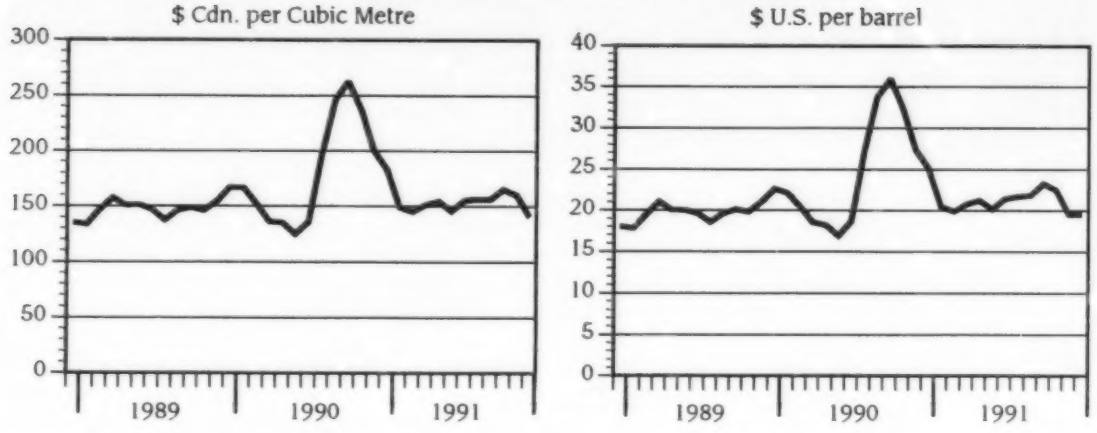
World oil demand (including demand in the former centrally planned economies) rose by 300 000 barrels per day in 1991 to 66.4 million barrels per day. Consumption by the member countries of the Organization of Economic Cooperation and Development (OECD) rose by 100 000 barrels per day to 38 million barrels per day as declining demand in North America was more than offset by increases in the European and Pacific regions of the OECD. Strong growth in China and Asia helped raise total non-OECD oil consumption by 200 000 barrels per day to 28.4 million barrels per day.

Total crude production by all countries outside the Organization of Petroleum Exporting Countries (OPEC) fell by 400 000 barrels per day to 41.5 million barrels per day. American and Norwegian supply increased while in the former USSR oil production is estimated to have fallen by more than 1 million barrels per day in 1991 compared to 1990, a decline of nine percent.

OPEC crude oil production averaged 23.4 million barrels per day in 1991, compared with 23.1 million barrels per day in 1990. Saudi Arabia raised production to 8.4 million barrels per day compared with 4.9 million barrels per day as recently as 1989. The trade embargo on Iraq and post Gulf war production difficulties in Kuwait limited supply from those two countries to 300 000 and 100 000 barrels per day, respectively. Prior to Iraq's invasion of Kuwait, Iraqi production was nearly 3 million barrels of crude oil per day while Kuwait produced about 1.5 million barrels per day.

Figure 1

Average Price of WTI at Cushing



U.S Natural Gas Prices

The natural gas prices that are relevant to Canada's international trade are those in the United States. In this connection, the following comments outline the overall North American gas situation in 1990 and 1991, indicating price changes in some of the specific U.S. markets served by Canadian natural gas.

During 1991, the average U.S. wellhead price declined to $US 1.59 per thousand cubic feet, from $US 1.71 per thousand cubic feet in 1990, a drop of seven percent. As well, the average city-gate price declined by nearly four percent, to $US 2.91 per thousand cubic feet.

Prices generally fell in the market areas where Canadian exports compete with U.S. natural gas, thus resulting in lower netbacks to Canadian producers. As reported by the United States Department of Energy, city-gate prices in California declined by about three percent in 1991, to $US 2.80 per thousand cubic feet. In the Pacific Northwest, they were down by approximately one percent to $US 2.15 per thousand cubic feet. Prices in the Central Region were virtually unchanged in 1991 at $US 3.09 per thousand cubic feet. In the Northeast, prices fell to $US 3.23 per thousand cubic feet or about three percent.

Energy Production, Consumption and Trade

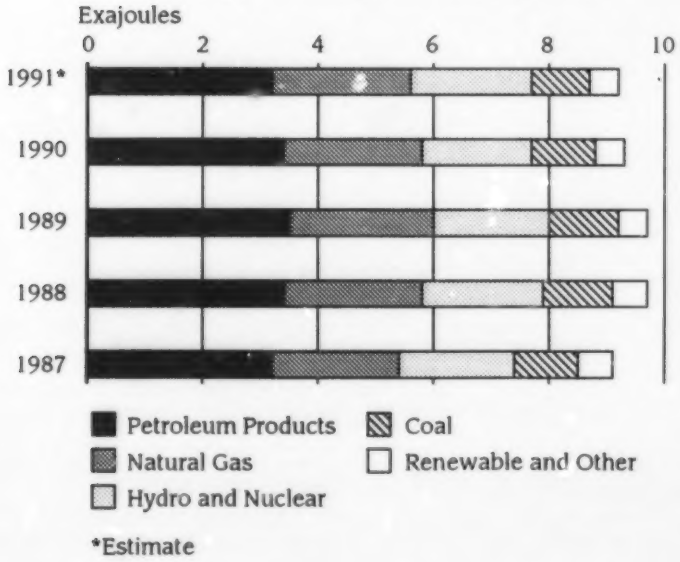
A strong increase in Canadian net energy exports more than offset a decline in domestic energy consumption, resulting in higher energy production in 1991 compared to 1990.

Primary energy consumption in Canada in 1991 was 0.7 percent below the 1990 level. Petroleum product demand, which accounts for about a third of total Canadian consumption, showed the largest decline, falling by more than five percent. Natural gas demand was virtually unchanged from its 1990 level, while hydroelectric and nuclear power consumption rose by 3.9 percent and 16.3 percent, respectively.

The total export volume of crude oil and refined petroleum products was 2 501 petajoules in 1991, a 14.6 percent increase over the 1990 level. Export revenue rose from $9.3 billion in 1990 to $9.6 billion in 1991. The imported volume of crude oil and refined petroleum products decreased by 7.3 percent to 1 338 petajoules in 1991, while its cost fell by more than 23 percent to $5.2 billion. The net export volume of crude oil and refined petroleum products rose by more than 55 percent from 747 petajoules in 1990 to 1 163 petajoules in 1991. Net export revenue from crude oil and refined petroleum products also increased by about 55 percent from $2.8 billion in 1990 to $4.4 billion in 1991.

Figure 2

Canadian Energy Consumption



Natural gas exports continued the rising trend which began in 1986. In 1991 gas export volumes increased by about 16 percent over the 1990 level to a record 1 808 petajoules. In 1991 the average gas export price was $1.99 per gigajoule compared with $2.11 per gigajoule in 1990 and net export revenues increased from $3.2 billion to $3.5 billion. The import volume of natural gas, all from the U.S., was 21 petajoules.

The volume of electricity exports rose by more than 20 percent to 71 petajoules and thereby reversed a declining trend that had begun in 1987. Firm sale volumes increased by one percent while interruptible sale volumes rose by nearly 42 percent, generating export revenues of $557 million. The volume of electricity imports declined from 56 petajoules in 1990 to 6 petajoules in 1991. Consequently, net electricity export volumes increased from virtually zero in 1990 to 64 petajoules in 1991 while net export revenues were $487 million in 1991.

Table 1

Canadian Trade in Petroleum, Natural Gas and Electricity

(Petajoules and Billions of Dollars)

	1989		1990		1991[e]	
	PJ	$Billions	PJ	$Billions	PJ	$Billions
Exports						
Petroleum[a]	2139	7.0	2183	9.3	2501	9.6
Natural Gas	1432	3.0	1537	3.3	1808	3.6
Electricity[b]	66	0.7	59	0.5	71	0.6
Total Exports	3637	10.7	3779	13.1	4380	13.8
Imports						
Petroleum[a]	1506	5.3	1436	6.5	1338	5.2
Natural Gas	46	0.1	28	0.1	21	0.1
Electricity[b]	31	0.3	56	0.6	6	0.1
Total Imports	**1583**	**5.7**	**1520**	**7.2**	**1365**	**5.4**
Net Export Total	**2054**	**5.0**	**2259**	**5.9**	**3015**	**8.4**

The numbers in this table have been rounded.

(e) Estimate

(a) Includes petroleum products and natural gas liquids. Excludes exchanges between Canada and the United States.

(b) Electricity is converted at 3.6 petajoules per terawatt hour on the basis of the energy content of the electricity output. Excludes exchanges between Canada and the United States.

Crude Oil and Petroleum Products

Production of Canadian Crude Oil

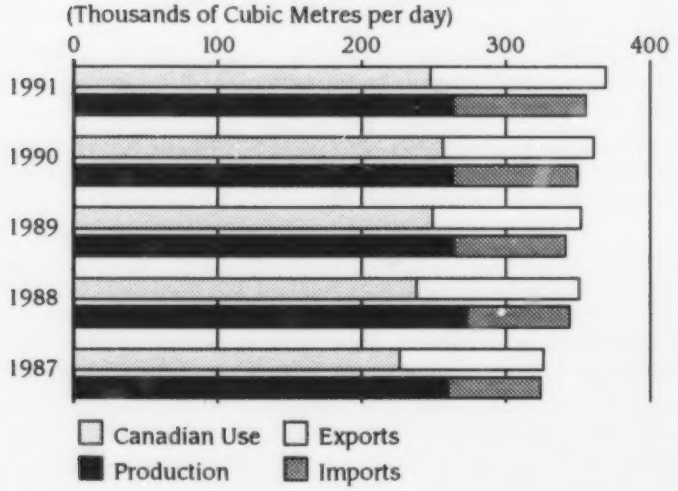
Crude oil production in Canada (including conventional light and heavy crude oil, bitumen, pentanes plus and synthetic crude oil) averaged approximately 263 400 cubic metres per day in 1991, the same as the 1990 level.

The supply of conventional light crude oil continued the declining trend which began in 1988, averaging 135 900 cubic metres per day, a decline of three percent from 1991's average supply of 140 400 cubic metres per day.

In 1991, synthetic crude oil production from the Syncrude and Suncor mining plants averaged about 35 900 cubic metres per day, nine percent higher than in 1990 (32 800 cubic metres per day). The Newgrade Upgrader produced 6 800 cubic metres per day of synthetic crude oil. Of this approximately 2 000 cubic metres per day was marketed as synthetic crude oil (as compared with 1 500 cubic metres per day last year), while the remainder was used directly by the adjoining refinery to produce refined petroleum products.

Figure 3

Canadian Crude Oil and Equivalent Supply and Disposition



Total pentanes plus production was approximately 19 200 cubic metres per day in 1991, of which about 12 000 cubic metres per day was used as diluent for heavy crude oil and bitumen. Pentanes plus supply increased four percent over the 1990 level (18 500 cubic metres per day) and diluent use also increased by three percent.

The supply of blended heavy crude (which includes conventional heavy crude oil, bitumen and the 64 percent of pentanes plus supply used as diluent) averaged about 84 600 cubic metres per day in 1991, an increase of less than two percent over the final 1990 level (83 600 cubic metres per day). A small decrease of bitumen production because of low prices for this product was more than offset by an increase in conventional heavy production.

Oil Refining

In 1991, the demand for main petroleum products in Canada fell by about five percent, with significant declines in heavy fuel oil and aviation turbine fuel. Demand for motor gasoline and middle distillates also fell, by two and three percent respectively. Refinery production declined by five percent and imports of main petroleum products fell by thirty-five percent. Exports of main petroleum products, however, rose by one percent.

Canadian refineries received domestic crude oil at a rate of 144 200 cubic metres per day, a decline of 13 percent from 1990, while receipts of foreign crude oil rose by seven percent to 91 900 cubic metres per day.

Crude Oil Imports

In 1991, crude oil imports represented 39 percent of total refinery feedstock requirements in Canada, compared with 34 percent in 1990. On a regional basis, the Atlantic region depended totally on foreign crude oil. Quebec imported nearly 94 percent of its total requirements while, in 1990, it imported approximately 74 percent of its total needs. The increase reflects the shut-down of the Sarnia to Montreal pipeline in mid-1991. Ontario continued to import a small quantity from the United States.

Canada imports crude oil from a variety of sources, including some within OPEC. Crude oil originating from OPEC countries represented 32 percent of total imports in 1991, identical to the 1990 level. North Sea crudes amounted to 60 percent of total crude oil imports, down from 62 percent in 1990. Crude oil imports from other sources equalled eight percent, up two percent from 1990.

Crude Oil Exports

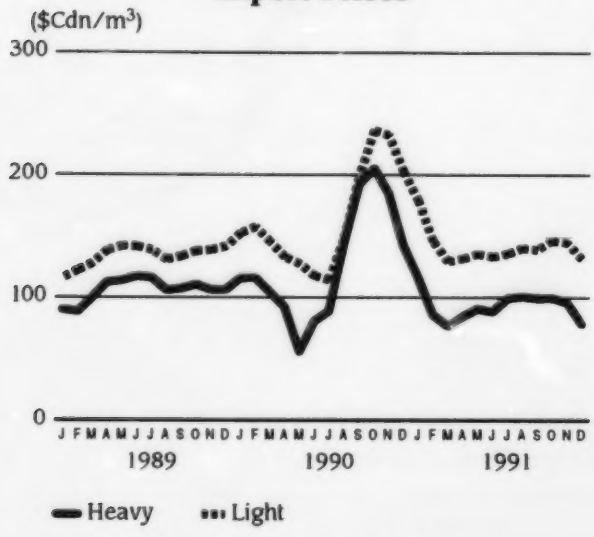
Total crude oil exports, including synthetic crude oil, were 121 900 cubic metres (768 thousand barrels) per day, up 17 percent from the 1990 level of nearly 104 200 cubic metres (656 thousand barrels) per day. The 1991 total was comprised of about 62 300 cubic metres (392 thousand barrels) per day of light crude oil and equivalent and nearly 59 600 cubic metres (375 thousand barrels) per day of blended heavy crude oil. The estimated value of crude oil exports in 1991 was $5.2 billion compared with $5.5 billion in 1990. The lower value in 1991 reflects the decline in prices from the relatively high levels experienced during the second half of 1990 which, in turn, resulted from the conflict in the Persian Gulf.

The American midwest continued to be Canada's most important market. Smaller volumes were shipped to the American west coast, and to the Far East and American Gulf Coast from Vancouver.

The largest export buyers of light Canadian crude oil in 1991 were Amoco, Clark Oil, Conoco, Mobil, Sun Refining, Ashland and United Refining; for heavy Canadian crude oil, the largest foreign buyers were Koch, Mobil, Amoco and Exxon.

Figure 4

Light and Heavy Crude Oil Export Prices



1) Prices are not adjusted for quality.
2) Light prices are at Edmonton while heavy prices are at Hardisty.

Figure 5

Canadian Crude Oil Disposition 1991

(Thousands of Cubic Metres per Day)

Domestic crude oil refined in Canada	144.2
Domestic crude oil exported from Canada	121.9
Imported crude oil refined in Canada	
North Sea	54.7
Western Hemisphere	7.7
Middle East	14.1
Other	15.4
Total	91.9

Main Petroleum Product Imports

In 1991, imports of main petroleum products averaged 12 600 cubic metres (79 thousand barrels) per day, a decrease of 35 percent from 1990. The bulk of this decline occurred in motor gasoline and jet fuel. The decrease in receipts of motor gasoline occurred in Ontario and Quebec while the decline in jet fuel imports occurred in eastern Canada, including Ontario, and in British Columbia.

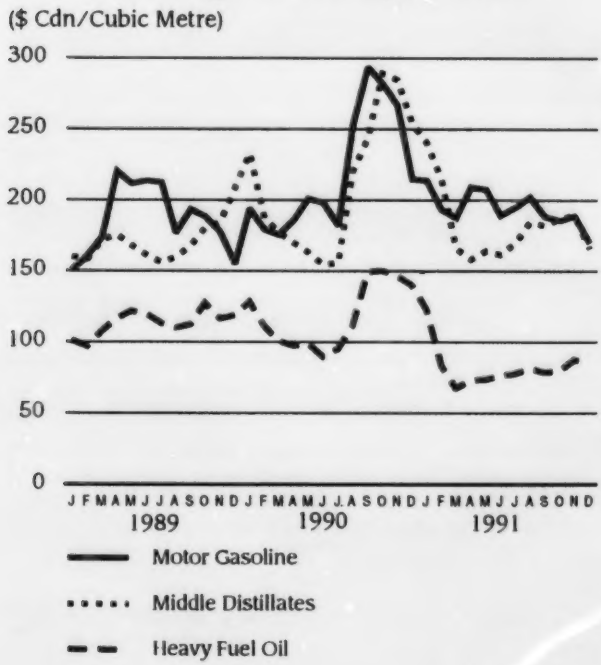
Main Petroleum Product Exports

Exports in 1991 of main refined petroleum products and partially processed oil increased one percent to 34 400 cubic metres (217 thousand barrels) per day. A 12 percent increase in shipments of motor gasoline and middle distillates was roughly offset by a decline in the exports of other petroleum products. On a regional basis, exports from the Atlantic Provinces declined but these were offset by similar increases from Ontario and British Columbia. The Atlantic Provinces represented about 53 percent of the total exports.

The United States continued to be Canada's largest buyer of petroleum products, receiving almost 87 percent of our total exports compared with 96 percent in 1990. Exports were also made to the Far East and Europe. In the United States, the east coast continues to be the largest recipient of Canadian refined

Figure 6

Main Petroleum Products
Average F.O.B. Export Price



petroleum products, followed by the midwest. The largest exporters of main petroleum products were Newfoundland Processing, Imperial Oil, Irving Oil, Shell Canada and Noco Energy.

The estimated value of main petroleum product exports, including partially processed oil, in 1991 was $1.5 billion, roughly equal to the 1990 level. This value excludes product exports from crude oil processing agreements for which prices are not assigned.

Table 2

Petroleum Product Exports, 1991

(Thousands of Cubic Metres)

	Motor Gasoline	Middle Distillates	Aviation Turbine Fuel	Heavy Fuel Oil	Partially Processed Oil	Total(a)
Atlantic	2 193	2 750	288	1 192	169	6 592
Quebec	73	476	16	292	39	896
Ontario	875	1 104	7	744	–	2 730
Prairies	315	433	99	35	–	882
British Columbia	791	509	97	15	31	1 443
Total	**4 247**	**5 272**	**507**	**2 278**	**239**	**12 543**

(a) Excludes propane, butanes, lubricants, greases and asphalt.

Oil Pipeline Capacity

During 1991, Interprovincial Pipe Line Inc. (IPL) operated at capacity on the Edmonton to Sarnia part of its system. The volumes nominated on the system exceeded capacity throughout 1991, resulting in monthly apportionment ranging from a low of eight percent to a high of 36 percent. On 3 March 1991, a break occurred on Lakehead's 34 inch pipeline in Minnesota which resulted in IPL's line 3 being shut down for four days. When it returned to service, the operating pressure was temporarily reduced which, in turn, decreased the sustainable capacity.

The leak on the Lakehead system and the apparent overnominations to the system significantly affected the level of apportionment. New procedures developed by IPL and the industry to reduce apportionment were implemented on a trial basis in early 1992.

In July 1991, IPL's line 9 from Sarnia to Montreal was shut down because of the decreasing availability of Canadian light crude oil and the availability of lower priced offshore crude oil.

Trans Mountain Pipe Line Company Ltd. generally had space available on its system during 1991.

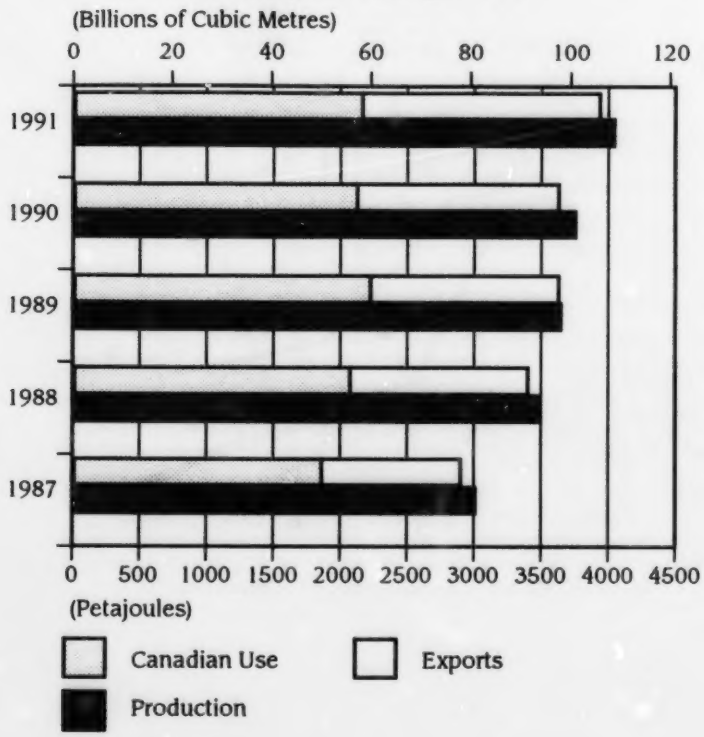
Natural Gas

Domestic Supply and Demand

Marketable natural gas production in Canada is estimated to have been 108.8 billion cubic metres in 1991. This represents an increase of about eight percent over the 1990 production volumes of 101 billion cubic metres. The increase in total Canadian production is primarily attributable to a large increase in production from British Columbia and also, to a lesser extent, an increase in Alberta production. British Columbia production increased due to the relaxation of allowable restrictions and the contribution from new pools in the Klua, Hamlet North and Sukunka fields.

Figure 7

Natural Gas
Supply and Disposition



Imports of natural gas in 1991 were 547.4 million cubic metres, representing a decrease of 26 percent from the 1990 level of approximately 742.5 million cubic metres. The decrease in natural gas imports reflected increased purchases of Alberta spot gas in lieu of American spot gas for storage during the summer months. The Board issued 17 short-term import orders compared with 38 import orders issued in 1990. Seventy-five percent of the gas imported entered Canada through the St. Clair Pipelines Ltd. pipeline in Ontario which connects the Union Gas Limited and Michigan Consolidated Natural Gas pipeline systems. Twelve percent of the gas imported into Canada entered Canada near Windsor, Ontario at the interconnection of the Union Gas Limited and Panhandle Eastern Pipe Line Company's systems.

In 1991, domestic gas sales were 54.7 billion cubic metres compared with 54.5 billion cubic metres in 1990.

Residential and commercial gas demand rose in 1991 in response to lower winter temperatures, particularly in Ontario and Saskatchewan. Taken together, industrial and direct sales were unchanged in 1991 compared to 1990 as increases in Saskatchewan were offset by declines in British Columbia and Alberta.

Figure 8

Natural Gas Average Export Prices

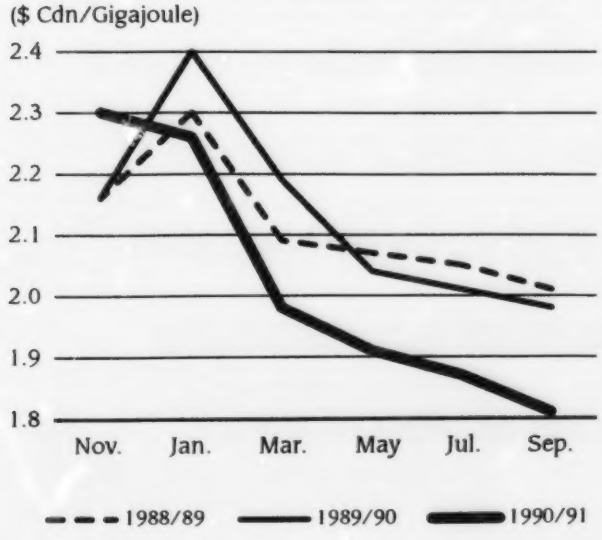
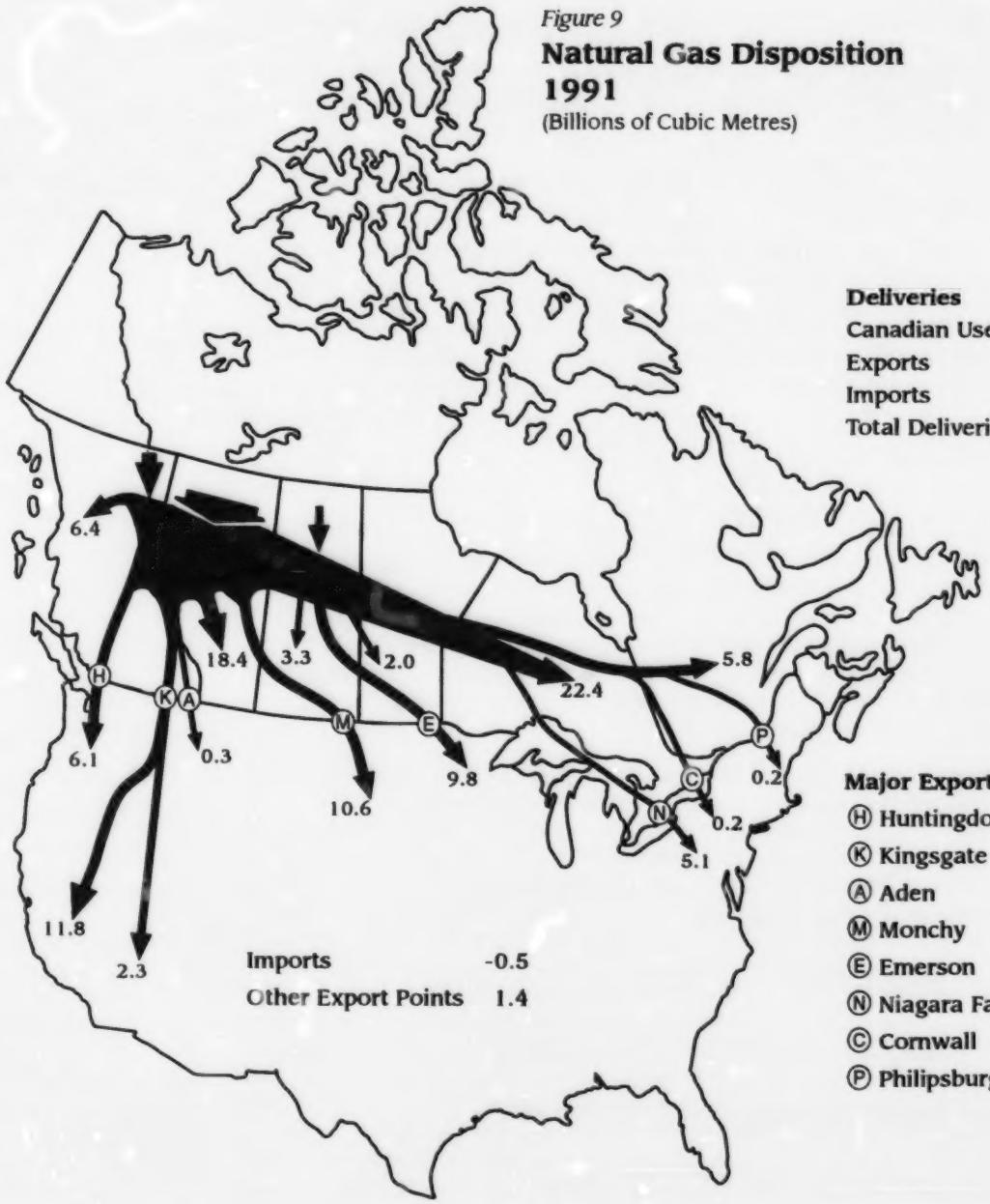


Figure 9

Natural Gas Disposition 1991

(Billions of Cubic Metres)



Deliveries	
Canadian Use	58.1
Exports	47.8
Imports	-0.5
Total Deliveries	105.4

Major Export Points	
Ⓗ Huntingdon	6.1
Ⓚ Kingsgate	14.1
Ⓐ Aden	0.3
Ⓜ Monchy	10.6
Ⓔ Emerson	9.8
Ⓝ Niagara Falls	5.1
Ⓒ Cornwall	0.2
Ⓟ Philipsburg	0.2

Exports

Gas exports to the United States rose by about 17 percent in 1991 from 40.7 billion cubic metres (1.44 trillion cubic feet) to 47.8 billion cubic metres (1.69 trillion cubic feet).

Total gas export revenues also increased, by about 10 percent, from $3.3 billion in 1990 to $3.6 billion in 1991.

The average price per gigajoule received for natural gas exports decreased by 5.7 percent, from $2.11 in 1990 to $1.99 in 1991.

The Central Region of the United States accounted for 46 percent of Canada's 1991 gas export sales, California 28 percent , the Pacific Northwest 13 percent, the Northeast 11 percent, and the Mountain Region 2 percent.

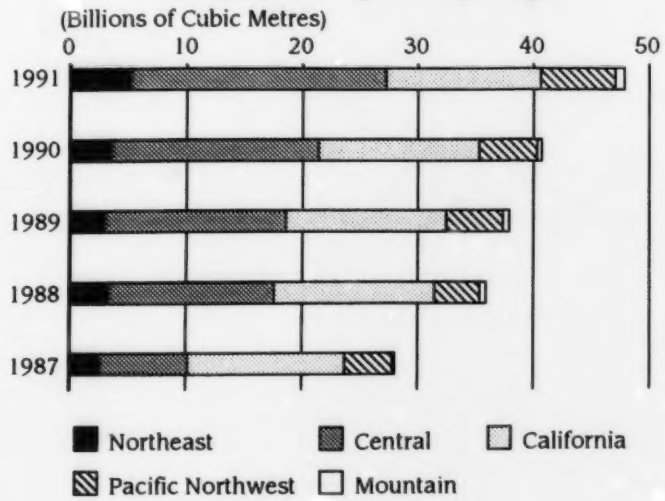
The Central Region was responsible for the bulk of the year-over-year increase in export volumes and most of the remainder of the increase came from the Northeast and the Pacific Northwest regions. In 1991, the Canadian share of the U.S. gas market represented 8.6 percent of consumption.

The sales of Canadian gas exported under short-term orders increased to 22.9 billion cubic metres (808 billion cubic feet) in 1991 from 14.5 billion cubic metres (512 billion cubic feet) in 1990. Short-term sales accounted for about 48 percent of total natural gas exports in 1991, compared to 36 percent in 1990. It should be noted that some export volumes were flowing under short-term orders instead of long-term licences pending the construction of facilities and the receipt of regulatory approvals.

The completion of new pipeline facilities in 1991 provided for additional capacity which facilitated the sales of Canadian gas to the export market.

Figure 10

Natural Gas Exports by Region



Natural Gas Pipeline Capacity

During 1991, there was little spare capacity on any of the major gas pipelines in Canada. The Board approved a major mainline pipeline expansion application by TransCanada PipeLines Limited, consisting of approximately 1200 kilometres of pipeline and 17 compressor units. The Board also approved two mainline looping and two gathering pipeline applications by Westcoast Energy Inc., totalling approximately 160 kilometres of pipe.

The Board held a public hearing in 1991 on an application by TransCanada PipeLines Limited to construct a further 300 kilometres of pipeline. The Board also conducted a written hearing on a proposal by Alberta Natural Gas Company Ltd. to expand its capacity by 24.7 million cubic metres (872 million cubic feet) per day through the addition and modification of compression facilities at its three existing compressor stations in southern British Columbia. The expansion is intended to serve new markets in California and the U.S. Pacific Northwest. The Board approved both applications in the spring of 1992.

The Board also received an application from Altamont Gas Transmission Canada Limited for a 300-metre segment of 762-millimetre diameter pipe to be constructed at the Alberta/Montana border. That segment of pipe is one link in a proposed pipeline system intended to transport 20.8 million cubic metres (734 million cubic feet) per day of Canadian-sourced natural gas to markets in the western U.S., primarily in California.

Natural Gas Liquids

The total production of natural gas liquids from gas plants and refineries in 1991 was 27.1 million cubic metres. Ethane production was 11.1 million cubic metres, propane production was 9.5 million cubic metres, and butanes production was 6.5 million cubic metres. The production of ethane increased eight percent over the previous year whereas the supply of propane and butanes increased by two percent and 33 percent respectively. The change in the reported supply of butanes does not affect the available supply as the increase merely reflects the fact that refinery produced butanes used as refinery feedstock are now included as supply. This feedstock volume, which is mainly used for gasoline blending, was previously subtracted from the supply of refinery butanes but has now been included in supply because new reporting procedures made it impossible to quantify this volume. This treatment of refinery feedstock volumes is now similar to the treatment of natural gas liquids injected into oil pools to enhance recovery, which the Board takes into account on both the supply side and demand side of the supply/demand balance.

Total exports of natural gas liquids during 1991 were 6.7 million cubic metres (42 million barrels). Ethane exports were 0.6 million cubic metres (4 million barrels), propane exports were 3.7 million cubic metres (23 million barrels) and butanes exports were 2.4 million cubic metres (15 million barrels). During 1991,

ethane exports declined by 25 percent from 1990, propane shipments rose marginally, and butanes exports fell by seven percent.

The American midwest continued to be Canada's largest market for propane and butanes receiving almost 70 percent of the total export volume. Smaller amounts were delivered to the American east and west coasts.

The largest exporters of propane were Amoco, Petro-Canada, Imperial Oil and Shell Canada while the major exporters of butanes were Amoco, Petro-Canada, Shell Canada and PanCanadian.

The estimated value of natural gas liquids exports in 1991 was $0.7 billion compared with $0.8 billion in 1990. The decline reflects lower export levels.

Electricity

Generating Capacity

In 1991, Canada's total net generating capacity was approximately 104 631 megawatts, an increase of about 1 684 megawatts, or about 1.6 percent over 1990.

Generation and Consumption

Total generation of electricity in 1991 was an estimated 489 000 gigawatt hours, up five percent from 1990. Of Canada's total generation, 63 percent was supplied from hydroelectric generation, 21 percent from conventional thermal generation and 16 percent from nuclear generation. Total Canadian consumption in 1991 is estimated to have been 470 000 gigawatt hours, which is virtually unchanged from 1990. Figure 11 shows the supply and disposition of electricity for the past five years.

Exports

Electricity export sales rose in 1991, reversing the decline experienced in each year from 1987 to 1990. This increase, which returned exports to a level exceeding 1989 sales, was due to improved hydro conditions and increased market demand. Total sales were 19 828 gigawatt hours, an increase of 20.2 percent from 1990. Firm sales were essentially unchanged with only a 1.0 percent increase over 1990 while interruptible sales showed a 41.6 percent increase. The total 1991 export revenue of $557.3 million only increased 1.9 percent over the previous year, reflecting the reduction of over 15 percent in the average price per kilowatt hour.

All the major exporting utilities except NB Power increased their exports over 1990 quantities. Both Ontario Hydro and Hydro-Québec showed dramatic increases in their interruptible exports of 234 percent and 327 percent respectively, whereas firm exports declined by six percent and 73 percent respectively. Manitoba Hydro had increases of 210 percent in its firm exports and 50 percent in its interruptible sales. BC Hydro had a better year overall than in 1990 with an increase in interruptible sales of 43 percent and a small decrease in firm quantities.

Hydro still remains the leading source of production for all exports of electricity. Its share increased to 71 percent in 1991, which is close to its historic level, from 63 percent in 1990. Other fuels used to produce electricity for export were: nuclear at 11 percent, imported coal at eight percent, Canadian coal at three percent and natural gas at two percent.

Tables 14 and 15 in the Appendices show the origin and destination of all exports, by exporting province and importing region or state. As was the case in 1989 and 1990, the New England region was the leading import area, accounting for about 38 percent of all Canadian electricity exports.

Imports

Imports, which during 1989 and 1990 played a large role in electricity trade, returned to a more historic level in 1991. In 1990 purchases from the U.S. reached a record of 15 543 gigawatt hours due to significant imports by Ontario Hydro to offset reduced nuclear plant production caused by extended unit outages. With the drop in U.S. purchases by Ontario Hydro in 1991, total Canadian imports fell to 1 688 gigawatt hours. The associated cost of imports in 1991 was $70 million, a marked decline from $556 million in 1990. Figure 12 shows the exports and imports in 1991 as well as interprovincial transfers.

Net exports in 1991 were 18 140 gigawatt hours composed of exports of 19 828 gigawatt hours and imports of 1 688 gigawatt hours. This is the highest level of net exports since 1988.

Figure 11

Electricity Supply and Disposition

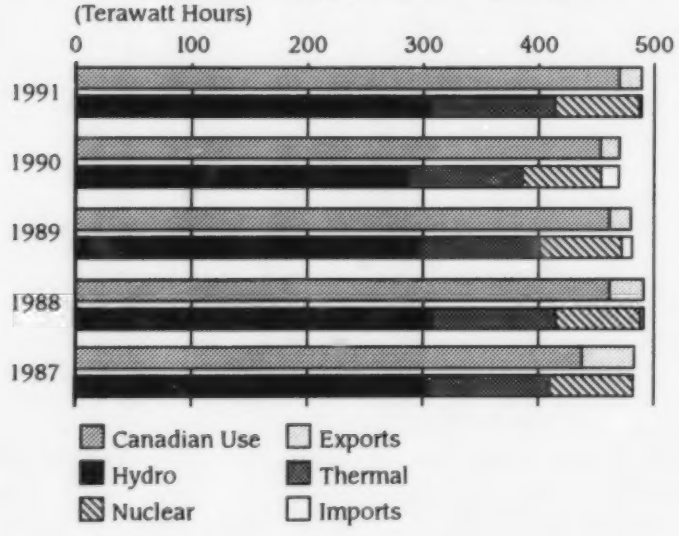
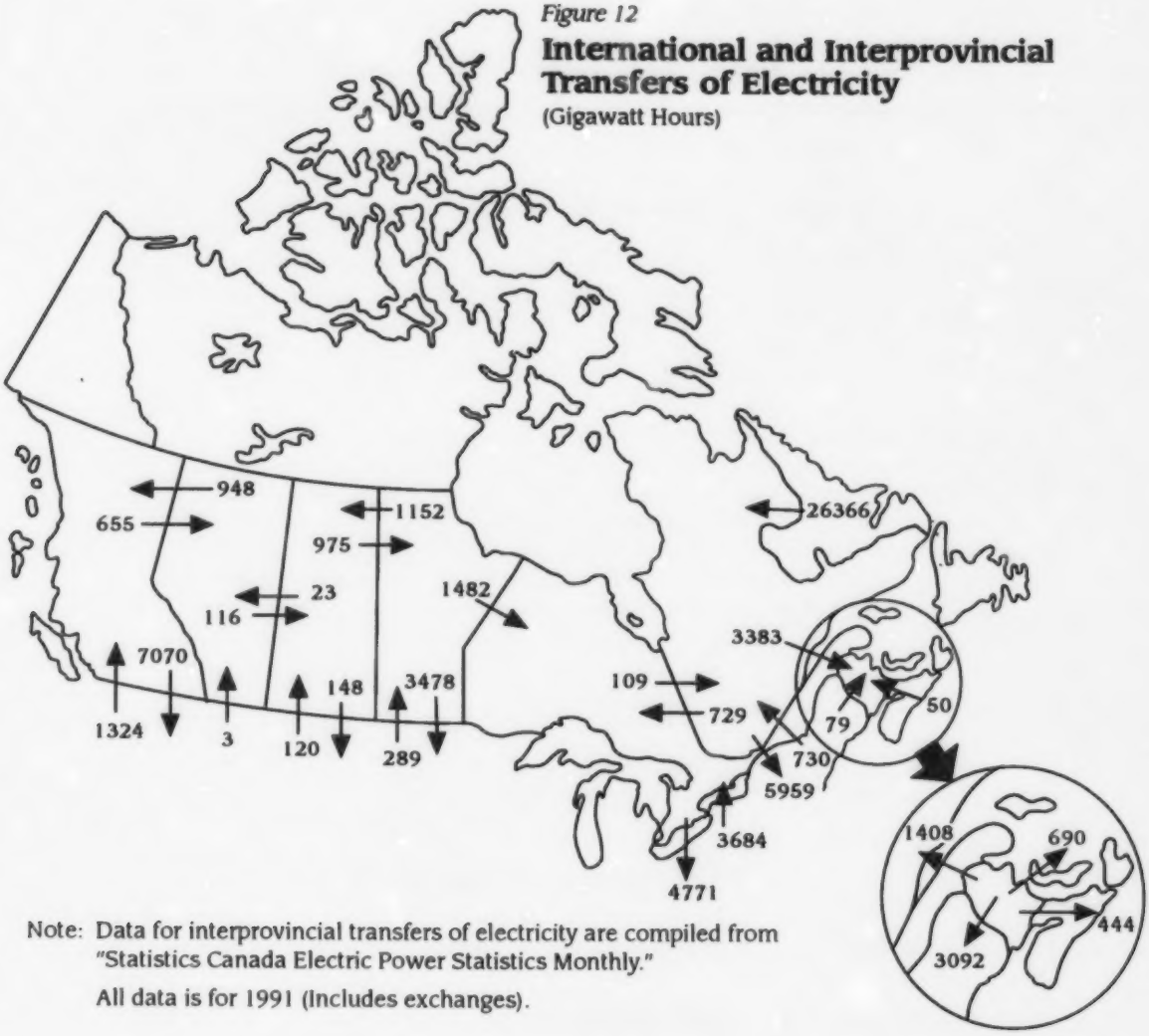


Figure 12

International and Interprovincial Transfers of Electricity

(Gigawatt Hours)



Note: Data for interprovincial transfers of electricity are compiled from "Statistics Canada Electric Power Statistics Monthly."

All data is for 1991 (Includes exchanges).

Oil and Gas Activity and Reserves

Exploration and Development Activity

Overall activity of the Canadian oil and gas industry decreased marginally in 1991 compared with the level of activity in 1990. Exploration activity during 1991 declined because of continuing uncertainty about future oil prices, low gas prices due to persistent oversupply of natural gas, declining cash flows and more attractive opportunities overseas.

Canadian oil and gas industry spending at provincial and federal land sales totalled $384 million in 1991, the lowest amount since 1986 and down 36 percent from the nearly $600 million spent in 1990. The provincial and federal governments leased the mineral rights to 2.78 million hectares during 1991 compared to 3.61 million hectares in 1990. The average price per hectare in 1991 was $138, down nearly 17 percent from $166 per hectare in 1990 but up slightly from an average of $134 per hectare in 1989. Figures 13 and 14 summarize land sale activity for the past five years.

Figure 13

Land Sales

(Millions of Hectares Leased)

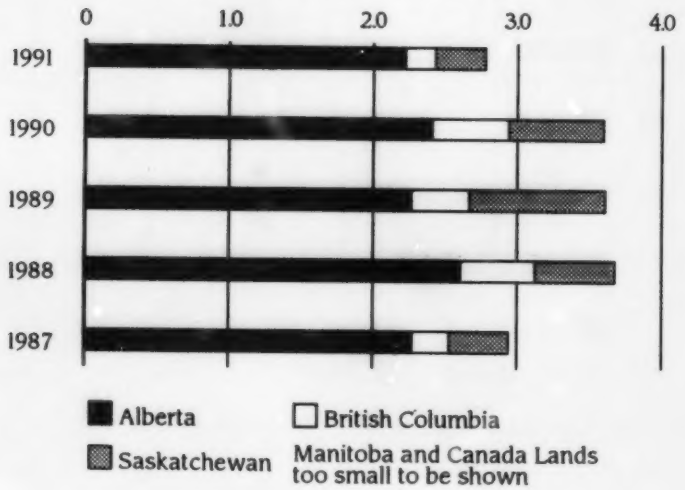


Figure 14

Land Sales

(Total Bonuses-Millions of Dollars)

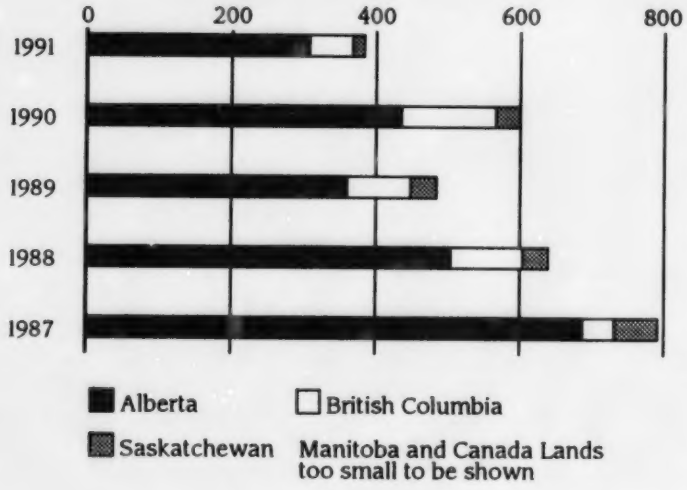
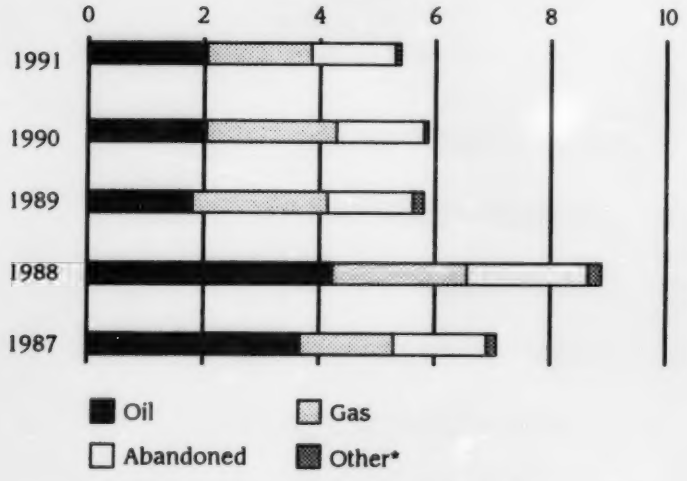


Figure 15

Canadian Wells Drilled

(Thousands)



* Includes suspended, service and miscellaneous wells

The number of wells drilled decreased by nine percent to about 5 400 wells in 1991, compared with 6 000 wells in 1990 (Figure 15).

The decrease in drilling activity during 1991 can be totally attributed to a decrease in gas-directed drilling. Gas wells in Alberta were 32 percent of all completions in 1991 compared with 40 percent in 1990. Saskatchewan gas wells were 40 percent of total completions in 1991 and 39 percent in 1990. British Columbia gas wells accounted for 42 percent of all completions in 1991 versus 55 percent in 1990. Oil wells accounted for a greater share of total well completions in most provinces in 1991 because oil prices were relatively stronger than natural gas prices.

Drilling rig activity in 1991, on average, decreased by eight percent from the level of activity observed during 1990 (Figure 16). As usual, activity peaked during the winter season.

The winter rig activity during the first two months was slightly higher than the activity during the same time period in 1990. However, a lower level of rig activity occurred in most of the remaining months during 1991.

Figure 16

Canadian Rig Activity

(Number of Rigs Drilling per Week)

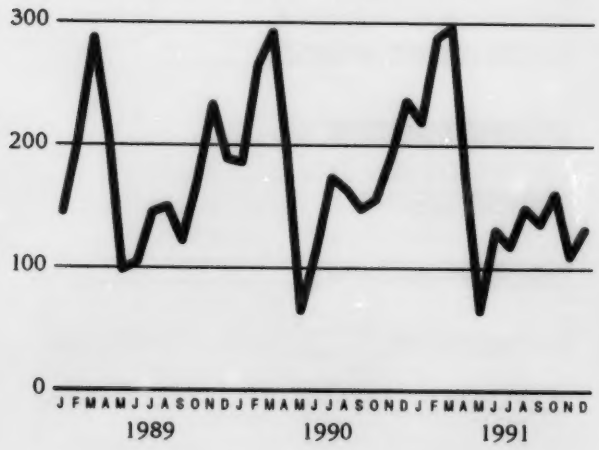


Figure 17

Geophysical Activity

(Average Number of Crews Active per Month)

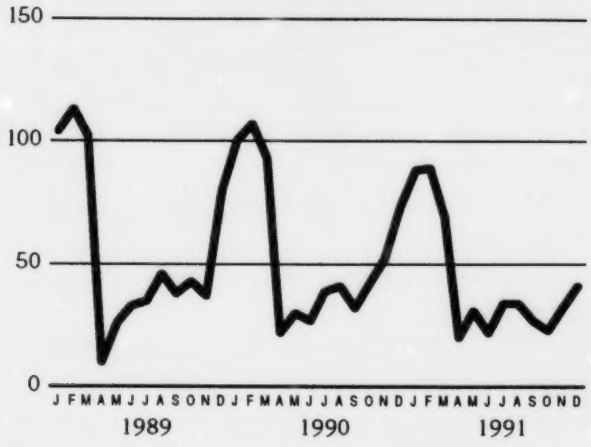
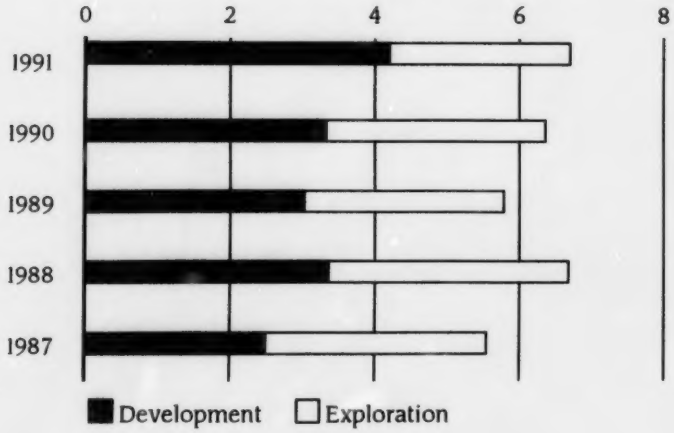


Figure 18

Exploration and Development Expenditures

(Billions of Dollars)



Geophysical activity in 1991 was lower than the 1990 level in almost every month, both in terms of the average number of active crews per month and the number of kilometres of seismic shot per month. The average number of active crews per month for the last three years is illustrated in Figure 17. Geophysical activity traditionally increases during the winter months.

Exploration and development expenditures in Canada during 1991 were approximately $6.7 billion (Figure 18). This represents an increase of approximately six percent from the $6.3 billion spent in 1990 and is comparable on a nominal basis with the average annual expenditures over the past five years in conventional areas. During 1991, additional capital expenditures of approximately $1.1 billion were made for the development of major projects, including Hibernia, Cohasset, Panuke, Caroline and the Lloydminster heavy oil upgrader.

Oil and Gas Reserves

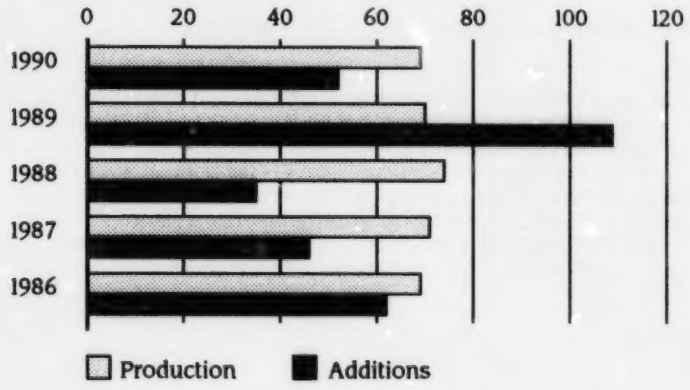
The Board's estimates of initial (i.e., before production) established reserves of conventional crude oil increased 52.1 million cubic metres from the estimate for year-end 1989, due to new discoveries, extensions to existing pools and revisions to estimates of reserves in existing pools. A significant part of the new discoveries can be attributed to development in the Provost and Grand Forks areas in Alberta. The application of horizontal drilling increased the reserves by nearly nine million cubic metres. Most of the increase occurred in Saskatchewan.

The Board's estimate of remaining reserves of conventional crude oil, as of 31 December 1990, is 688.3 million cubic metres (1991 reserves data will be available toward the end of 1992). This, compared with the estimate at year-end 1989, shows a decrease of about two percent or 16.3 million cubic metres. Figure 19 illustrates the trend of conventional crude oil reserves additions relative to production over the past five years.

Figure 19

Conventional Crude Oil Reserves Additions and Production

(Millions of Cubic Metres)



Since 1985, annual additions of conventional crude oil have generally not replaced production and have been progressively declining, except for 1989 when the discovered crude oil resources in the Hibernia field were booked as established reserves in view of the announced development plan.

The estimates of the initial and remaining established reserves for crude bitumen contained in Table 3 are for developed projects only, and are based on estimates provided in the Alberta Energy Resources Conservation Board's annual reserve report.

Table 3

Estimated Established Reserves of Crude Oil at 31 December 1990

(Millions of Cubic Metres)

Conventional Crude Oil	**Initial**	**Remaining**
British Columbia	90.1	17.4
Alberta	2 182.1	438.1
Saskatchewan	501.0	118.4
Manitoba	35.7	7.8
Ontario	11.6	1.5
Northwest Territories & Yukon(a)		
Mackenzie Delta and Beaufort Sea	0.0	0.0
Arctic Islands and Eastern Arctic Offshore	1.0	0.8
Mainland Territories	35.2	21.3
Nova Scotia(b)	3.0	3.0
Newfoundland(c)	80.0	80.0
Total Conventional Crude Oil	**2 939.7**	**688.3**
Crude Bitumen(d)		
Surface-mineable	644.0	467.0
In Situ	102.9	57.4
Total Crude Bitumen	**746.9**	**524.4**
Total (Conventional Oil & Bitumen)	**686.61**	**212.7**

(a) For the purpose of this table, the Northwest Territories and Yukon Territory are divided into three geographic regions. The reserves for the Arctic Islands and Eastern Arctic Offshore region are composed totally of the Bent Horn Field. The reserves for the Mainland Territories region are composed totally of the Norman Wells Field.
(b) The reserves for Nova Scotia are composed totally of the Cohasset and Panuke Fields.
(c) The reserves for Newfoundland are composed totally of the Hibernia Field.
(d) Source: Alberta Energy Resources Conservation Board, Report ST90-18 (based on developed projects only).

During 1990, the Board's estimate of initial established reserves of marketable natural gas increased by 136 billion cubic metres, or about three percent, compared with the estimate at year-end 1989. Two-thirds of this increase, 86 billion cubic metres, occurred in Alberta.

As shown in Table 4, the Board's estimate of remaining established reserves of marketable natural gas, as of 31 December 1990, is 2 262 billion cubic metres (1991 reserves data will be available toward the end of 1992). This estimate is 28 billion cubic metres higher than the estimate for year-end 1989 as reserves additions more than offset production during the year.

Table 4

Estimated Established Reserves of Marketable Natural Gas at 31 December 1990

(Billions of Cubic Metres)

	Initial	**Remaining**
British Columbia	453	229
Alberta	3 262	1 623
Saskatchewan	141	84
Ontario	40	9
Northwest Territories & Yukon[(a)]		
Mackenzie Delta & Beaufort Sea	309	309
Arctic Islands & Eastern Arctic Offshore	0	0
Mainland Territories	15	8
TOTAL	**4 220**	**2 262**
(Total in exajoules)	**162.4**	**87.1**

NOTE: The numbers on this table have been rounded.

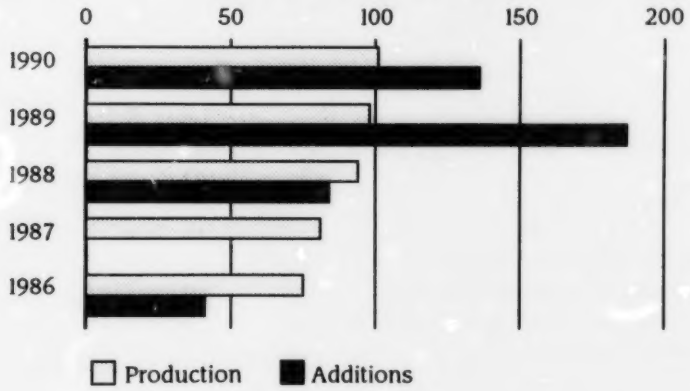
(a) For the purpose of this table, the Northwest Territories and Yukon Territory are divided into three geographic regions.

Alberta's remaining reserves decreased slightly. Saskatchewan and British Columbia recorded increases of about 17 percent and seven percent respectively. As shown in Figure 20, the increases in gas-directed drilling during 1989 and 1990 not only resulted in the discovery of a large number of small pools but also in significant extensions to existing pools. The substantial number of natural gas export applications recently considered by the Board necessitated a review of estimates of reserves for both new and existing pools. These revised estimates have been incorporated in the Board's estimate of established reserves.

Figure 20

Marketable Natural Gas Reserves Additions and Production*

(Billions of Cubic Metres)



*Starting in 1989, the data includes reserve additions and revisions for both the conventional producing areas and the frontier regions; however, the frontier regions contributed zero reserve additions in 1989. Data for 1986 to 1988 includes only the conventional producing areas.

Appendices

Energy Overview

1. Canadian Energy Consumption
2. Crude Oil and Equivalent Supply and Disposition
3. Natural Gas Supply and Disposition
4. Electricity Generation and Disposition

Oil

5. Exports of Petroleum Products – 1991
6. Exports of Canadian Crude Oil and Equivalent – 1990 and 1991
7. Exports of Canadian Crude Oil and Equivalent

Gas

8. Exports of Natural Gas
9. Imports of Natural Gas

Natural Gas Liquids

10. Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
11. Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders
12. Total Net Exports of Propane and Butanes

Electricity

13. Exports 1991
14. Electricity Trade Between Canada and the United States (By Province)
15. Electricity Trade Between the United States and Canada (By American Region/State)

1. Canadian Energy Consumption[a] (Petajoules)

	1987	1988	1989	1990	1991(e)
Petroleum (b)	3218.2	3369.5	3528.3	3407.0	3208.0
Natural Gas (c)	2159.2	2372.3	2526.6	2443.5	2439.0
Hydroelectricity (d)	1130.5	1096.4	1035.5	1054.2	1095.5
Nuclear (d) (f)	905.3	958.9	937.7	832.9	969.5
Coal	1117.7	1200.3	1197.8	1077.2	1035.4
Renewable and Other	554.2	553.5	543.2	541.1	537.5
TOTAL FOR CANADA	**9085.1**	**9550.9**	**9769.1**	**9355.9**	**9285.0**

a - Includes non-energy use, own use, and conversions and includes fuel for electricity exports.
b - Includes LPGs.
c - Excludes reprocessing shrinkage and includes ethane, reprocessing fuel and fuel used for bitumen production.
d - Hydro and nuclear are converted at 3.6 PJ/TW.h. and 12.1 PJ/TW.h. respectively.
e - Estimate.
f - Includes energy used to produce steam.

If the energy were converted using a heat content of 10.5 petajoules per terawatt hour, a conversion factor which estimates the amount of primary energy associated with hydro and nuclear electricity based on the amount which would be required if fossil fuels were used, the amount would be:

	1987	1988	1989	1990	1991(e)
Hydroelectricity and Nuclear	4082.9	4029.9	3833.8	3797.6	4036.6

2. Crude Oil and Equivalent Supply and Disposition (Thousands of Cubic Metres per Day)

	1987	1988	1989	1990	1991
Supply					
Canadian Production (a)	259.6	272.6	264.2	263.4	263.3
Imports (b)	64.7	71.7	77.3	86.2	92.0
Total Supply (d)	324.3	344.3	341.5	349.6	355.3
Disposition					
Domestic (b)	226.5	238.3	249.2	256.6	247.6
Exports (c)	99.6	112.8	102.9	104.2	121.9
Total Disposition (d)	326.1	351.1	352.1	360.8	369.5

a- Source:NEB
b- Source:EMR Form 153 - Refinery Receipts.
c- Source:NEB Form 306 - Crude Oil Exports.
d- Total supply does not equal total disposition due to inventory changes, etc.

3. Natural Gas Supply and Disposition (Billions of Cubic Metres at 101.325 KPa and 15 Celsius)

	1987	1988	1989	1990	1991(e)
Net Sales in Canada	47.8	52.7	56.9	54.5	54.7
Other Uses in Canada (a)	2.1	2.9	2.8	4.5	3.4
Imports	-0.1	-0.6	-1.2	-0.7	-0.5
Exports	28.0	35.9	37.9	40.7	47.8
Total Deliveries of Canadian Gas (b)	77.8	90.9	96.4	99.0	105.4
Marketable Gas Production (b)	80.9	93.9	98.1	101.0	108.8

a - Includes pipeline fuel and losses and other deliveries, less inventory changes.
b - Total deliveries includes synthetic natural gas but excludes reprocessing shrinkage and reprocessing fuel which are included in marketable gas production.
e - Estimate.

4. Electricity Generation and Disposition (Terawatt Hours)

	1987	1988	1989	1990	1991 (p)
Total Generation	483.2	490.6	482.7	467.6	489.0 (p)
Imports (a)	0.5	2.8	8.7	15.4	1.9 (p)
Total Supply	483.7	493.4	491.4	483.0	490.9
Demand	438.3	463.7	472.9	466.7	471.1
Exports (a)	45.4	29.7	18.5	16.3	19.8

a - Excludes exchanges between Canada and the United States.
p - Preliminary.

5. Exports of Petroleum Products - 1991 (Cubic Metres)

Month	Motor Gasoline	Middle Distillate	Heavy Fuel Oil	Aviation Turbine Fuel	Partially Processed Oil	Total(a)
January	445 776	447 501	123 766	73 085	42 895	1 133 023
February	230 432	424 568	173 805	19 487	0	848 292
March	532 455	558 812	216 259	93 958	41 777	1 443 261
April	399 923	503 970	208 897	44 496	40 215	1 197 501
May	493 856	415 604	187 502	35 337	11 200	1 143 499
June	342 028	360 588	168 242	27 270	0	898 128
July	274 428	326 396	198 711	28 208	37 280	865 023
August	352 143	521 120	239 454	38 845	45 115	1 196 677
September	377 965	505 303	189 013	54 060	0	1 126 341
October	218 708	283 082	164 780	26 803	20 170	713 543
November	323 850	457 704	151 202	31 037	0	963 793
December	255 378	467 448	257 449	34 067	0	1 014 342
Total(m^3/d)	**4 246 942**	**5 272 096**	**2 279 080**	**506 653**	**238 652**	**12 543 423**

a) Excludes propane, butane, lubricants, greases, asphalt, petrochemicals, etc.

6. Exports of Canadian Crude Oil and Equivalent - 1990 and 1991 (Cubic Metres)

Exporter	1990 Total	1990 Daily Average	1991 Total	1991 Daily Average
Amoco Production Company	4 493 880	12 312	6 884 630	18 862
Ashland Oil Inc.	1 734 845	4 753	1 679 000	4 600
BP Oil	293 095	803	1 047 185	2 869
Cenex	1 117 995	3 063	1 085 875	2 975
Chinese Petroleum Corporation	39 713	109	70 445	193
Clark Oil & Refining Corporation	2 308 990	6 326	3 209 445	8 793
Conoco Inc.	2 409 365	6 601	2 496 235	6 839
Crystal Refining	45 990	126	32 390	86
Exxon Company, U.S.A.	1 243 555	3 407	1 516 940	4 156
Frontier Oil and Refining Co.	-	-	39 785	109
Koch Refining Company	9 244 720	25 328	9 133 030	25 022
Laketon Refining Corp.	351 130	962	374 125	1 025
MG Refining & Marketing	-	-	33 580	92
Marathon Petroleum Company	715 765	1 961	757 740	2 076
Marubeni Corporation	-	-	70 060	192
Mobil Oil Corporation	5 176 065	14 181	6 074 695	16 643
Montana Refining Company	271 560	744	281 415	771
Murphy Oil U.S.A. Inc.	993 165	2 721	1 039 520	2 848
Pecten Trading Company	29 565	81	-	-
Shell Oil Company	255 865	701	114 610	314
Sinclair Oil Corporation	-	-	357 335	979
Sun Refining and Marketing Co.	2 552 810	6 994	2 981 320	8 168
Texaco U.S.A.	29 565	81	196 735	539
Total Petroleum , Inc.	23 695	643	387 265	1 061
Union Oil Company of California	1 095	3	151 110	414
United Refining Company	3 159 805	8 657	3 107 975	8 515
Uno-Ven Company	1 059 230	2 902	1 172 745	3 212
U.S. Oil & Refining Co.	267 910	734	191 990	526
Total	**37 819 373**	**104 193**	**44 487 200**	**121 879**

7. Exports of Canadian Crude Oil and Equivalent (Cubic metres per day)

	1987	1988	1989	1990	1991
Light Crude and Equivalent	44 213	50 214	47 136	44 814	62 335
Heavy Crude Oil	55 357	62 565	55 734	59 379	59 544
Total	**99 570**	**112 778**	**102 870**	**104 193**	**121 879**

8. Exports of Natural Gas (Millions of Cubic Metres)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
AEC Oil and Gas Company	GO-98-89	2.6	0.0	2.7
Alberta and Southern Gas Co. Ltd.	GL-99	10 848.9	9 578.8	52 967.0
	GO-132-90	12.1	24.5	36.6
	GO-101-91	0.0	13.3	13.3
Alberta Northeast Gas & AEC	GL-105	0.0	0.9	0.9
Alberta Northeast Gas & Atcor	GL-104	0.0	1.6	1.6
Alberta Northeast Gas & ProGas	GL-103	0.0	3.5	3.5
Alberta Northeast Gas & TCPL	GL-102	0.0	47.4	47.4
Altana Exploration & Roan Resources Ltd.	GO-30-91	0.0	14.2	14.2
Amerada Hess Canada	GO-68-91	0.0	3.9	3.9
Amoco Canada Petroleum Company Ltd.	GL-112	167.8	174.4	370.2
	GO-80-88	1.6	0.0	173.7
	GO-122-89	0.0	0.0	1.4
	GO-124-89	7.6	0.0	33.1
	GO-1-90	107.9	0.0	107.9
	GO-78-90	0.2	20.6	20.9
	GO-79-90	24.5	125.1	149.6
	GO-80-90	1.0	0.0	1.0
	GO-11-91	0.0	192.4	192.4
Amoco Canada Resources Limited	GL-108	129.2	6.6	185.0
	GO-94-88	0.0	0.0	125.1
	GO-16-89	21.6	22.4	125.1
Amoco Canada Res. / Consolidated Edison Co.	GL-127	0.0	166.5	166.5
Atcor Ltd.	GO-51-90	12.6	58.7	71.3
B.C. Gas Inc.	GL-123(a)	50.6	50.2	100.7
Bonus Gas Processors Corp.	GO-88-88	6.0	0.0	19.3
	GO-63-90	4.6	34.5	39.1
	GO-51-91	0.0	7.1	7.1
BP Resources Canada Limited	GO-24-89	63.3	11.7	87.0
	GO-42-90	7.3	109.0	116.3
British Columbia Petroleum Corporation	GO-104-89	365.6	0.0	489.6
	GO-123-89	405.8	0.0	687.3
Brymore Gas (Canada) Inc.	GO-88-89	22.3	85.0	116.6
	GO-15-90	237.8	36.0	273.8
	GO-99-90	0.0	16.2	16.2

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Brymore Gas (Canada) Inc. (cont'd)	GO-141-90(b)	0.0	33.3	33.3
	GO-58-91 (13.2 in-tr	0.0	91.1	91.1
Canadian Hunter Marketing Ltd.	GO-58-90	19.9	0.0	19.9
	GO-81-90	68.4	254.7	323.1
	GO-48-91	0.0	274.7	274.7
Canadian Hydrocarbons Limited	GO-9-89	23.7	0.0	293.2
	GO-12-90	271.1	28.7	299.9
	GO-87-90	7.2	28.0	35.2
	GO-3-91	0.0	266.3	266.3
	GO-79-91	0.0	90.5	90.5
Canadian Natural Resources Ltd.	GO-67-91	0.0	0.2	0.2
Canadian Occidental Petroleum Limited	GO-18-88	21.9	0.0	158.4
	GO-37-90	64.8	123.1	187.9
	GO-97-91	0.0	46.5	46.5
Canadian-Montana Pipe Line Company	GL-25	0.0	0.0	3 516.3
	GL-72	240.2	251.4	988.0
	GO-3-79	4.4	4.5	41.5
CanStates Gas Marketing	GO-54-90	9.8	104.8	114.6
	GO-146-90	3.7	222.7	226.5
	GO-75-91	0.0	38.0	38.0
CanStates Gas Marketing/Transco Marketing	GO-95-91	0.0	42.5	42.5
Canterra Energy Ltd.	GL-113	130.2	116.3	283.8
	GL-114	93.4	105.3	198.7
	GO-14-88	14.0	0.0	84.6
	GO-70-89	27.5	41.8	71.3
	GO-14-90	77.1	105.6	182.6
Canwest-Gas Supply Inc.	GO-52-90	695.5	1 812.2	2 507.8
	GO-24-91	0.0	457.1	457.1
Centra Gas Ontario Inc.	GL-130(c)	0.8	142.6	143.4
Centra Transmission Holdings Inc.	GL-28	0.0	0.0	129.7
	GL-29	0.0	0.0	2 690.3
	GL-30(c)	234.2	246.6	5 292.5
	GO-113-89	7.8	0.0	11.2
	GO-115-89	91.8	0.0	115.4
	GO-70-90	2.9	8.0	10.9
	GO-71-90	39.0	157.2	196.2
Cherhill Resources Limited	GO-22-88	0.0	0.0	27.7
Chevron Canada Resources Limited	GO-116-90	0.0	0.2	0.2

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Chevron Canada Resources Limited (cont'd)	GO-117-90	0.2	5.4	5.5
Coastal Gas Marketing Company	GOL-1(d)	0.0	7.7	7.7
	GO-38-91	0.0	42.9	42.9
Continental Energy Marketing Ltd.	GO-118-90	0.0	18.3	18.3
	GO-39-91	0.0	83.3	83.3
Czar Resources Limited	GO-28-88	0.0	0.0	175.6
	GO-41-90	3.4	71.0	74.4
Dekalb Petroleum Corporation	GO-57-89	142.7	67.3	258.2
	GO-34-91	0.0	91.1	91.1
Direct Energy Marketing Limited	GO-107-90	0.1	12.6	12.8
	GO-22-91	0.0	11.0	11.0
	GO-53-91	0.0	10.4	10.4
Encor Energy Corporation Inc.	GO-42-91	0.0	2.4	2.4
Energy Marketing Exchange	GO-92-91	0.0	29.4	29.4
Enron Gas Marketing	GO-126-90	10.8	105.0	115.8
Esso Resources Canada Limited	GO-74-89	8.5	0.0	8.5
	GO-34-90	0.1	0.0	0.1
Esso Resources Canada Ltd. and	GL-82	15.0	0.0	1 825.5
Transco Energy Marketing Company	GL-136	108.5	65.5	174.0
	GO-117-89	502.3	0.0	566.5
	GO-17-91	0.0	384.0	384.0
	GO-63-91	0.0	324.9	324.9
Fulton Cogeneration Associates	GO-40-91	0.0	67.9	67.9
Grand Valley Gas Company	GO-112-89	33.4	0.0	37.7
	GO-142-89	4.8	0.0	6.8
	GO-35-90	40.9	0.0	40.9
	GO-103-90	22.0	177.9	199.9
	GO-104-90	70.4	190.3	260.8
	GO-86-91	0.0	223.9	223.9
Husky Oil Operations Ltd.	GO-153-89	2.9	1.8	4.7
	GO-33-91	0.0	5.2	5.2
Imperial Oil Limited	GO-91-88(e)	31.9	0.0	132.4
Indeck Gas Supply Corporation	GL-133	6.5	151.4	157.9
	GO-133-90	0.0	31.1	31.1
	GO-27-91	0.0	57.5	57.5

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Jonan Reource Management	GO-46-91	0.0	13.1	13.1
Kamine Carthage Cogen Co. Inc.	GO-80-91	0.0	4.9	4.9
Kamine South Glens Falls Cogen Co. Inc.	GL-159	0.0	14.3	14.3
KannGaz Producers Ltd.	GL-77	241.0	258.5	672.1
	GO-34-89	0.0	0.0	7.8
	GO-75-89	51.9	0.0	63.3
	GO-45-90	125.7	502.9	628.6
Kerr-McGee Canada Ltd.	GO-37-89	0.9	0.0	1.7
	GO-61-91	0.0	3.7	3.7
Many Islands Natural Gas (Canada) Limited	GL-44(f)	436.0	463.6	7 875.8
Mobil Oil Canada	GL-145	0.0	50.1	50.1
	GL-146	0.0	18.1	18.1
	GL-147	0.0	29.4	29.4
	GO-109-89	2.1	0.0	2.1
	GO-129-89	773.6	1 000.3	1 773.9
	GO-139-89	0.0	0.0	2.0
	GO-145-89	124.8	174.2	299.0
	GO-49-90	7.3	0.0	7.3
	GO-50-90	5.4	35.5	40.9
	GO-75-90	2.8	8.0	10.8
	GO-89-91	0.0	1.1	1.1
Natgas Canada Inc.	GO-30-90	27.4	0.0	27.4
Niagara Gas Transmission Limited	GL-78	226.9	182.5	927.7
	GO-16-90	3.0	38.9	41.9
Norcen Energy Resources Limited	GL-115	133.6	123.5	296.4
	GL-116	44.5	54.4	98.9
	GO-51-89	0.0	0.0	4.3
North Canadian Oils Limited	GL-142	0.0	25.1	25.1
	GL-143	0.0	17.3	17.3
	GO-65-88	159.5	0.0	225.0
	GO-69-89	177.1	137.4	330.6
	GO-61-90	140.7	327.2	467.9
	GO-55-91	0.0	149.2	149.2
Northcan Energy Inc.	GO-30-88	0.0	0.0	24.9
	GO-3-89	34.7	0.0	414.5
Northern Minnesota Utilities	GOL-3-91(g)	0.0	39.4	39.4
	GO-88-91	0.0	38.2	38.2
Northern Minnesota Utilities/Warroad	GO-66-91	0.0	1.0	1.0

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Northridge Petroleum Marketing, Inc.	GO-79-89(h)	172.8	0.0	185.8
	GO-80-89	4.1	0.0	4.3
	GO-72-90	2.1	8.2	10.3
	GO-1-91(i)	0.0	155.1	155.1
	GO-15-91	0.0	102.7	102.7
Northwest Pacific Energy Marketing Inc.	GO-115-88	115.2	0.0	229.1
	GO-122-90	0.0	187.2	187.2
Pan-Alberta Gas Ltd.	GL-97	7 265.7	7 268.2	28 204.4
	GL-106	2 478.6	2 224.5	7 598.2
	GO-8-88	1.6	0.0	370.7
	GO-67-89	65.4	35.7	2 230.5
	GO-21-90	0.4	0.0	0.4
	GO-13-91	0.0	372.5	372.5
Petro-Canada Inc.	GO-25-89	228.1	0.0	415.2
	GO-105-90	65.8	310.0	375.8
	GO-76-91	0.0	3.1	3.1
	GO-93-91	0.0	63.0	63.0
Placer Cego Petroleum Ltd.	GO-15-88	7.5	0.0	100.8
	GO-15-89	0.0	0.0	9.8
	GO-36-90	50.7	0.0	50.7
Poco Petroleums Ltd.	GL-117	78.3	116.1	194.4
	GL-118	76.3	94.4	170.7
	GO-72-87	8.0	0.0	57.4
	GO-110-88	511.4	0.0	1 131.9
	GO-53-89	100.3	22.9	144.8
	GO-54-89	0.1	0.0	0.1
	GO-13-90	48.7	472.1	520.8
	GO-123-90	68.8	568.8	637.7
	GO-44-91	0.0	33.5	33.5
ProGas Limited	GL-98	1 331.0	1 040.7	6 430.9
	GL-101	76.5	474.4	550.9
	GL-109	0.0	43.2	43.2
	GL-129	0.0	105.3	105.3
	GO-118-89	752.4	322.7	1 122.6
	GO-127-89	2.3	32.4	38.4
	GO-24-90	160.7	137.8	298.5
	GO-57-91	0.0	362.9	362.9
Ramaro Resources Inc.	GL-139	0.0	10.2	10.2
Renaissance Energy Ltd.	GO-9-91	0.0	2.1	2.1
Sceptre Resources Limited	GO-81-89	1.2	0.0	1.3
	GO-69-91	0.0	5.5	5.5

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Shell Canada Limited	GL-100	223.4	236.1	724.0
	GL-119	120.3	119.3	284.5
	GL-120	88.0	111.5	199.6
	GL-134	0.0	24.1	24.1
	GO-16-88	16.8	0.0	40.0
	GO-25-88	66.6	0.0	487.4
	GO-63-89	0.0	0.0	2.9
	GO-9-90	17.0	7.0	24.0
	GO-28-90	334.6	363.1	697.7
	GO-39-90	44.4	62.1	106.5
	GO-12-91	0.0	104.8	104.8
Suncor Inc.	GO-29-89	365.9	66.4	633.0
	GO-39-89	5.7	2.4	8.2
	GO-55-90	1.1	0.0	1.1
	GO-26-91	0.0	248.1	248.1
Tarpon Gas Marketing Ltd.	GO-2-88	3.6	0.0	4.7
	GO-10-90	235.9	12.5	248.4
	GO-73-90	0.0	8.1	8.1
	GO-142-90	0.0	15.9	15.9
	GO-36-91	0.0	144.7	144.7
TransCanada PipeLines Limited	GL-20	0.0	0.0	14 384.7
	GL-21(j)	7 007.8	6 107.3	137 342.2
	GL-37	131.9	0.0	29 320.7
	GL-38	0.0	0.0	6 770.7
	GL-39	0.0	0.0	915.0
	GL-42(j)	2 257.7	1 334.6	43 662.4
	GL-43	445.0	208.7	2 431.0
	GL-83	842.2	673.1	4 615.5
	GL-84	77.5	51.7	184.2
	GL-86	0.0	39.8	40.7
	GL-87	0.0	39.8	40.7
	GL-89	0.0	0.0	604.0
	GL-110	0.0	43.2	43.2
	GL-121	120.4	116.3	281.4
	GL-122	83.9	112.3	196.2
	GO-23-88	0.0	0.0	138.0
	GO-11-89 (3.5 in -tr	240.2	9.4	411.7
	GO-14-89	14.7	0.0	26.1
	GO-50-89	3 531.8	1 517.9	7 805.0
	GO-83-89	13.5	6.0	19.5
	GO-108-89	187.7	158.5	392.3
	GO-147-89	213.3	571.4	785.6
	GOL-2-91(k)	0.0	2 089.0	2 089.0
	GO-37-91	0.0	1 624.5	1 624.5
Unigas Corporation	GO-19-89	333.9	6.4	407.1
	GO-93-89	710.5	790.6	1 672.9
	GO-112-90	1.1	57.6	58.7

8. Exports of Natural Gas (Millions of Cubic Metres) (cont'd)

Exporter	Licence or Order Number	1990 Actual	1991 Preliminary	Cumulative to December 31 1991
Unigas Corporation (cont'd)	GO-148-90	0.0	10.4	10.4
	GO-14-91	0.0	193.1	193.1
Unocal Canada Limited	GO-75-88	0.0	0.0	6.1
	GO-152-89	27.4	0.0	27.4
	GO-144-90	0.0	2.4	2.4
Vancouver Island Gas Joint Venture (JV)	GO-90-91	0.0	15.9	15.9
Vector Energy Inc.	GO-78-89	82.4	295.2	377.6
	GO-77-91	0.0	33.7	33.7
Wainoco Oil Corporation	GO-120-89	86.3	0.0	104.5
	GO-108-90	5.4	45.3	50.7
	GO-91-91	0.0	10.5	10.5
Wes Cana Energy Marketing Inc.	GO-6-91	0.0	0.0	0.0
	GO-54-91	0.0	11.8	11.8
Westcoast Energy Marketing Ltd.	GL-131	309.8	326.7	636.5
	GO-44-89	27.1	0.0	64.5
	GO-116-89	399.4	0.0	565.9
Western Gas Marketing Limited	GL-128	0.0	26.6	26.6
	GL-141	0.0	25.9	25.9
	GO-63-88	0.0	0.0	28.4
	GO-151-89	0.3	0.0	0.4
	GO-66-90 13.5 (l)in-	133.4	2 755.4	2 888.8
	GO-95-90	17.5	199.3	216.8
	GO-120-90 (m)13.5	13.5	0.0	13.5
	GO-16-91	0.0	961.9	961.9
Western Gas Services Ltd.	GO-104-91	0.0	113.0	113.0
GROSS EXPORTS		**50 886.5**	**58 535.9**	**415 546.9**
NET EXPORTS(n)		**40 689.3**	**47 849.9**	**218 464.5**

a - This order authorizes an export of natural gas for storage in the U.S. and for subsequent import .
b - This licence authorizes an export of natural gas which the licensee has imported near Sarnia, Ont.
c - This licence authorizes an export of natural gas near Sprague, Man. for import near Rainy River, Ontario.
d - This order authorizes an export of natural gas at Niagara Falls, Ont. which the licensee has previously imported at Sarnia, Ont.
e - This order authorizes an export of natural gas near Emerson, Man. for an import of ethane by Dome Petroleum Limited and Amoco Petroleum Company Ltd. near Sarnia, Ont.
f - This licence authorizes an export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.
g - This order authorizes an export of natural gas near Sprague, Man. for subsequent import near Rainy River, Ont.
h - This order authorizes an export of natural gas for subsequent import on order GO-92-89.
i - This order authorizes exportation of natural gas near Emerson, Man. for subsequent import under order GO-106-90 and GO-29-91 near St. Clair, Ont.
j - This order authorizes an export of natural gas near Emerson, Man. for import near Sault Ste Marie and Sarnia, Ont. to serve eastern Canadian markets.
k - This order authorizes an export of natural gas near Emerson, Man. for subsequent import near Sault Ste Marie or Sarnia, Ont.
l - Export only
m - Import only
n - Excludes volumes of licences/orders under footnotes.

9. Imports of Natural Gas (Millions of Cubic Metres)

Importer	Licence or Order Number	1990	1991	Cumulative to 31 December 1991
Access Energy Corporation	GO-102-89	12.7	.0	16.2
Atcor Ltd.	GO-89-89	.0	.0	14.9
B.C. Gas Inc	GL-123(a)	45.4	33.4	78.8
Brymore Gas (Canada) Inc.	GO-135-90	.0	3.2	3.2
	GO-141-90(b)	.0	46.5	46.5
Canadian Western Natural Gas Company Limited	GO-117-88	.5	.0	1.3
	GO-87-89	.2	.0	.7
	GO-60-90	1.4	.9	2.3
	GO-65-91	.0	.3	.3
Centra Gas Manitoba Inc.	GO-113-90	23.8	31.5	55.3
	GO-18-91	.0	10.0	10.0
Centra Gas Ontario Inc.	GL-130(c)	.8	142.6	143.4
	GO-103-89	11.9	.0	54.7
	GO-146-89	13.7	.0	13.7
	GO-138-90	.0	22.5	22.5
Centra Transmission Holdings Inc.	GL-30(c)	234.2	246.6	5 292.5
Cibola (Canada) Energy Marketing Inc.	GO-73-91	.0	5.7	5.7
Coastal Gas Marketing Company	GOL-1(d)	.0	7.7	7.7
Continental Energy Marketing Ltd.	GO-45-91	.0	.4	.4
Gaz Métropolitan, Inc	GO-29-90	22.8	.0	31.3
	GO-48-90	41.9	14.7	56.7
	GO-67-90	.0	37.0	37.0
	GO-69-90	.3	.0	.3
Many Islands Natural Gas (Canada) Limited	GLI-5(e)	425.9	452.4	7 959.4
Natural Gas Clearinghouse	GO-26-90	27.4	.0	27.4
Northern Minnesota Utilities (WGML)	GOL-3-91(f)	.0	38.2	38.2
Northridge Petroleum Marketing Inc.	GO-92-89(g)	46.8	.0	59.9
	GO-141-89(h)	52.0	.0	52.0
	GO-40-90(g)	17.4	.0	17.4
	GO-106-90(h)	25.8	19.9	45.7
	GO-29-91(h)	.0	121.7	121.7
St. Clair Pipelines Ltd.	GO-47-89	.0	.0	58.9
	GO-111-89	14.9	.0	35.3
Tarpon Gas Marketing	GO-94-89	34.3	.0	52.8
	GO-68-90	4.2	.0	4.2

9. Imports of Natural Gas (Millions of Cubic Metres) (cont'd)

Importer	Licence or Order Number	1990	1991	Cumulative to 31 December 1991
The Consumers' Gas Company	GO-97-89	30.9	.0	76.0
	GO-143-89	57.7	.0	57.7
	GO-76-90	.0	40.4	40.4
	GO-105-91	.0	.3	.3
TransCanada PipeLines Limited	GL-21(i)	7 420.8	5 638.0	137 227.1
	GL-42(i)	1 598.3	1 334.6	43 075.5
	GOL-2-91(j)	.0	2 089.0	2 089.0
Unigas Corporation	GO-121-89	39.4	.0	42.5
	GO-47-90	.0	18.4	18.4
	GO-85-90	.0	5.4	5.4
Union Gas Limited	GO-61-89	.0	.0	60.0
	GO-62-89	22.9	.0	24.0
	GO-136-89	55.4	.0	60.0
	GO-137-89	60.0	.0	60.0
	GO-138-89	28.9	.0	28.9
	GO-136-90	.0	.0	.0
	GO-137-90	10.5	120.0	130.4
	GO-78-91	.0	66.8	66.8
Western Gas Marketing Limited	GO-90-89	23.6	.0	36.1
	GO-149-89	60.1	.0	60.1
	GO-64-90	2.1	29.0	31.2
	GO-97-90	.0	.8	.8
	GO-98-90	.0	107.9	107.9
Western Gas Services Ltd.	GO-103-91	.0	32.3	32.3
GROSS IMPORTS		**10 469.1**	**10 717.9**	**197 699.1**
NET IMPORTS(k)		**601.7**	**547.4**	**1 444.3**

a - This licence authorizes an import of natural gas at Huntingdon, B.C. which the licensee has previously exported for storage in the U.S.
b - This order authorizes an import of natural gas near Sarnia for subsequent export to the U.S. near Niagara Falls, Ont.
c - This licence authorizes an import of natural gas which the licensee has previously exported near Sprague, Man.
d - This order authorizes an import of natural gas near Sarnia for subsequent export to the U.S. near Niagara Falls, Ont.
e - This licence authorizes an import of natural gas for subsequent export near Emerson, Man. pursuant to licence GL-44.
f - This order authorizes an import of natural gas near Rainy River, Ont. which the holder has previously exported near Sprague, Man.
g - This order authorizes an import of natural gas which was previously exported under order GO-79-89.
h - This order authorizes an import of natural gas at St. Clair, Ont. which the holder has previously exported.
i - This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Man. This natural gas serves eastern Canadian markets.
j - This order authorizes an import of natural gas near Sault Ste Marie, and Sarnia, Ont. which the holder has previously exported near Emerson, Man.
k - Excludes volumes of licences/orders under footnotes.

10. Exports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Exporter	Licence or Order Number	1990	1991
PROPANE			
Amoco Canada Petroleum Company Limited	GL-32	92 698	92 698
Dome Petroleum Limited	GL-31	169 047	165 873
NET EXPORTS		**261 745**	**258 571**
ETHANE			
Dome Petroleum Limited	G0-43-89	801 184	307 287
Amoco Canada Resources Ltd.	GO-52-91	0	322 318
NET EXPORTS		**801 184**	**629 605**
		Kilograms	
ETHYLENE			
Dow Chemical of Canada Limited	EYL-2-76 (a)	0	0
NET EXPORTS		**0**	**0**

a- This licence/order authorizes an export of product for subsequent import

11. Imports of Propane, Butanes, Ethane and Ethylene Under Licences and Orders (Cubic Metres)

Importer	Licence or Order Number	1990	1991
ETHANE			
Dome Petroleum Limited	G0-43-89	755046	363616
	G0-134-89	62932	N/A
	GO-20-91	N/A	37234
Amoco Canada Petroleum Company Limited	GO-43-89	N/A	286980
	GO-20-91	N/A	79152
TOTAL IMPORTS		817978	766982
		Kilograms	
ETHYLENE			
Dow Chemical of Canada Limited	EYL-2-76	0	0

N/A Not Applicable

12. Total Net Exports of Propane and Butanes (Cubic Metres)

Exporter	Propane		Butanes	
	1990	1991	1990	1991
168211 Canada Limited	N/A	399 962	N/A	167 591
Amoco Canada Petroleum Company Ltd. (a)	1 730 171	1 803 947	1 169 177	1 150 336
Atlantic Speedy Propane Limited	6 531	5 619	N/A	N/A
Burnwell Gas of Canada Ltd.	44 322	46 900	N/A	N/A
Canadian Enterprise Gas Products Ltd.	18 367	18 671	25 210	19 340
CanPet Marketing Ltd.	17 249	38 832	3 075	27 106
CanStates Energy	115 449	43 144	206 585	64 028
Chevron Canada Resources	23 975	3 975	N/A	N/A
Commonwealth Petroleum Co.	26 317	26 391	N/A	N/A
Consumers' Co-Operative Refineries Ltd.	N/A	1 227	471	717
Desticon Gas Liquids Enterprises Ltd.	4 374	682	6 943	1 824
Dominion Propane Corp.	4 026	1 610	N/A	N/A
Dow Chemical Canada Inc.	N/A	7 970	N/A	N/A
Elbow River Resources Ltd.	2 274	1 956	12 301	40 753
Energy Transportation Inc.	10 568	14 468	17 236	26 024
Enron Liquids Marketing Canada Ltd.	14 008	20 494	5 976	5 287
Ferrellgas, Inc.	5 600	N/A	N/A	N/A
Gibson Gas Liquids Ltd.	478	6 939	22 304	27 630
Gulf Canada Resources Ltd.	170 528	136 024	101 387	36 017
Home Oil Company Limited	20 544	16 902	18 802	28 845
ICG Liquid Gas Ltd.	11 621	16 877	N/A	N/A
Imperial Oil Limited	312 370	N/A	234 842	N/A
Irving Oil Limited	120	N/A	N/A	N/A
Koch Hydrocarbons Canada	6 570	2 998	8 455	19 144
L.P.G. Resources Canada Inc.	120	N/A	N/A	N/A
M-P Oils Ltd.	79 718	76 278	1 444	1 371
Mobil Oil Canada	56 524	46 796	41 162	47 019
NGL Supply (1985) Ltd.	88 467	80 236	12 965	55 858
Norcal Gas Liquids Ltd.	5 818	6 901	576	2 836
Northridge Gas Liquids Marketing Inc.	N/A	794	N/A	19 334
PanCanadian Gas Products Ltd. (a)	131 822	140 713	93 759	117 242
Petro-Canada Hydrocarbons Inc.	464 548	424 452	303 594	273 041
Petrogas Marketing Ltd.	39 523	29 080	16 996	28 845
Petromont Inc.	40 799	47 406	N/A	470
Petrowest Petroleum Ltd.	31 130	22 470	12 048	4 351
Shell Canada Products Ltd.	194 620	202 047	222 609	191 933
Stittco Energy Ltd.	8 782	10 322	3 532	3 159
Suncor Inc.	N/A	16 386	4 856	14 650
Texaco Canada Inc.	9 658	N/A	4 787	N/A
Unocal Canada Ltd.	2 108	478	2 740	N/A
Vision Energy	3 478	11 289	N/A	2 100
TOTAL	**3 702 577**	**3 731 237**	**2 553 833**	**2 376 850**

a - Includes net export volumes under licences.
N/A Not Applicable

13. Exports 1991 (Megawatt Hours)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export ($)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
NEW BRUNSWICK								
Fraser Inc.	EPE-7	400 000	--	326 580	--	--	18 350 921	--
Maine and New Brunswick Electrical Power Company, Limited	EL-177	200 000	--	104 128	--	--	2 724 752	--
New Brunswick Power	EL-137 *	876 000	--	75 061	--	- 661	3 941 408	--
	EL-138	876 000	--	710 250	--	- 6 268	39 872 462	--
	EL-139 *	92 000	--	5 036	--	- 275	312 475	--
	EL-140 *	--	6 482 400(b)	--	69 975	- 1 721	--	3 020 561
	EL-141 *	1 226 400	--	--	--	3 809	--	--
	EL-142 *	140 000	--	--	--	--	--	--
	EL-143 *	--	300 000	--	22 590	1 486	--	1 200 132
	EL-144 *	250 000	--	--	--	--	--	--
	EL-145 *	--	179 000	--	--	327	--	--
	EL-150	1 138 000	--	177 562	--	- 1 566	9 968 110	--
	ELO-228 *	250 000	--	--	--	--	--	--
	ELO-244 *	--	--	--	--	--	--	--
to	EL0-246 *	445	--	230	--	--	21 615	--
	EPE-03	10 000	--	--	--	1 656	--	--
	EPE-14	876 000	--	780 657	--	- 8 520	39 647 196	--
	EPE-15	--	6 482 400(b)	--	650 963	- 10 478	--	18 489 253
	EPE-16	--	400 000	--	98 625	101	--	3 307 155
	EPE-17	250 000		--	--	29 335	--	--
	EPE-18	--	179 000	--	5 715	9	--	175 428
	EPE-19	201 480	--	58 678	--	- 1 625	4 109 383	--
	EPE-28	1 000	--	40	--	--	3 481	--
TOTAL				**2 238 222**	**847 868**	**5 609**	**118 951 803**	**26 192 529**

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export ($)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
QUEBEC								
Hydro-Québec	EL-96 *	3 000 000	--	--	--	38 133	4 209 768	--
	EL-151	--	11 000 000	--	--	--	--	--
	EL-152	--	23 564 000(c)	--	80 517	--	--	2 376 767
	EL-153	--	23 564 000(c)	--	994 930	456 325	--	26 057 800
	EL-154	11 220 000	--	1 699	--	--	83 735	--
	EL-156	25 000	--	--	--	--	--	--
	EL-165	--	3 000 000	--	--	--	--	--
	EL-166	--	4 000 000	--	--	--	--	--
	EL-167	--	6 920 000(d)	--	303 722	- 289 961	--	7 968 880
	EL-168	1 314 000	--	938 758	--	--	32 233 005	--
	EL-169	--	1 752 000(e)	--	--	- 78 602	--	--
	EL-176	9 000 000	--	2 919 223	--	--	64 057 271	--
	EL-178	3 000 000	--	13 277	--	--	6 028 377	--
	EL-179	350 000	--	213 559	--	--	9 445 143	--
	EL-181	400 000	--	305 537	--	--	14 [illegible]2 858	--
	ELO-223 *	--	946 000(f)	--	--	--	--	--
	ELO-224 *	400 000	--	--	--	--	--	--
	EPE-04 *	--	--	--	--	--	--	--
	to EPE-06 *	--	--	89	--	--	5 540	--
	and ELO-230 *	--	--	--	--	--	--	--
	to ELO-237 *	3 595	--	117	--	--	8 121	--
	ELO-255 *	400 000	--	11 968	--	--	1 783 949	--
	EPE-20	10512	--	932	--	--	63 064	--
TOTAL				**4 405 159**	**1 379 169**	**125 895**	**132 840 831**	**36 403 447**

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export ($)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
ONTARIO								
Boise Cascade Canada Ltd	ELO-265	--	175 000	--	--	--	--	--
Canadian Niagara Power Company Limited	ELO-269	--	250 000	--	--	175 266	--	--
	ELO-270	--	200 000	--	--	12 944	--	--
	EPE-08	225 000	--	208 993	--	--	5 209 906	--
The Canadian Transit Company	ELO-239	25	--	20	--	--	--	--
Cornwall Electric	ELO- 267	--	30 000	--	10 677	--	--	260 735
	ELO- 268	--	30 000	--	--	--	--	--
The Detroit and Windsor Subway Company	ELO-252	2 000	--	896	--	--	--	--
	EPE-26	3 000	--	107	--	--	--	--
Ontario Hydro	EL-134	--	10 000 000	--	--	2 132 602	--	--
	EL-135 *	10 500 000	--	9 098	--	--	753 268	--
	EL-136 *	--	25 000 000(g)	--	1 268 593	77 183	--	36 288 704
	ELO-238 *	--	--	--	--	--	--	--
and	ELO-273 *	15 200	--	503	--	--	1 006	--
	EPE-21		15 000 000	--	800 734	59 002	--	21 549 103
	EPE-23	1 320 000	--	14 114	--	--	1 104 990	--
	EPE-24	15 000	--	467	--	--	934	--
	EPE-25	200	--	15	--	--	1 678	--
TOTAL				**234 213**	**2 080 004**	**2 456 997**	**7 071 782**	**58 098 542**
MANITOBA								
The Manitoba Hydro-Electric Board	EL-97	--	1 800 000	--	785 963	--	--	8 931 800
	EL-98	876 000	--	108 395	--	--	4 743 010	--
	EL-99	262 800	--	98 225	--	--	1 820 009	--
	EL-100	800 000	--	--	--	--	--	--
	EL-101	2 500 000	--	--	--	--	--	--
	EL-102	249 000	--	602 623	--	--	13 622 293	--
	EL-103	--	12 000 000(i)	--	1 717 447	161 632	--	30 218 258
	ELO-241 *	--		2 326			107 583	
and	ELO-260	7 899	--	7	--	--	627	--
	EPE-30	7884	--	886	--	--	38 526	--
TOTAL				**812 462**	**2 503 410**	**161 632**	**20 332 048**	**39 150 058**

13. Exports 1991 (Megawatt Hours) (cont'd)

Exporter	Licence Number	Licence Authorization		Gross Energy Exported			Value of Export ($)	
		Firm	Interruptible	Firm	Interruptible	Exchange(a)	Firm	Interruptible
SASKATCHEWAN								
Saskatchewan	EL-118	438 000(j)	--	--	--	57 300	--	--
Power Corporation	EL-119	--	876 000(k)	--	58 646	32 234	--	685 417
	EL-120	876 000(k)	--	--	--	--	--	--
TOTAL				--	**58 646**	**89 534**	--	**685 417**
BRITISH COLUMBIA								
British Columbia	EL-162	6 000 000	--	1 080 216	--	--	31 275 882	--
Hydro and Power	EL-163	--	15 000 000(l)	--	3 996 115	889 457	--	83 812 033
Authority	EL-164	--	3 000 000	--	--	579 142	--	--
	ELO-251	--	--	607	--	--	53 377	--
	EPE-27	1 200	--	55	--	--	5 192	--
	EPE-02	15 164	--	18 408	--	--	1 067 084	--
	(m)	--	--	--	--	330 086	--	--
Cominco Ltd.	EPE-9	50 000	--	--	--	--	--	--
	EPE-10	250 000	--	--	--	--	--	--
	EPE-11	--	1 000 000	--	173 993	2 400	--	3 182 153
	EPE-12	--	1 000 000	--	--	--	--	--
West Kootenay Power and Light Company, Limited	EPE-13	50	--	19	--	--	1 465	--
TOTAL				**1 099 305**	**4 170 108**	**1 801 085**	**32 403 000**	**86 994 186**
TOTAL CANADA(n)				**8 789 361**	**11 039 205**	**4 640 752**	**311 599 464**	**247 524 179**

a - Exchange includes inadvertent and circulating flow, equichange, storage, adjustment transfer, and wheeling or carrier transfer which normally do not have associated revenue.
b - Total exports should not exceed 6 482.4 GW.h less any amounts exported pursuant to another licence or order under which the energy is transmitted over the line authorized by Certificate EC-III-8.
c - Total exports should not exceed 23 564 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificates EC-III-15 and EC-10.
d - Total exports should not exceed 6 920 GW.h less any amounts exported pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate EC-III-21.
e - Total exports should not exceed 1 752 GW.h less any amounts exported under Licence EL-168.
f - Total exports should not exceed 657 GW.h less any amounts exported under Licence El-171 and Orders ELO-223 and ELO-224.
g - Total exports should not exceed 946 GW.h less any amounts exported under Licences EL-171, EL-172 and Order ELO-224.
h - Total exports should not exceed 25 000 GW.h less any amounts exported under Licence EL-135.
i - Total exports should not exceed 12 000 GW.h less any amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.
j - Energy to be returned.
k - Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.
l - Total exports should not exceed 15 000 GW.h less any amounts exported under Licence EL-162.
m - Energy exported in accordance with the Skagit River Valley Treaty which is not under the Board's jurisdiction.
n - Excludes $6 159 977 revenue for wheeling, transmission, unit rental and storage transfer charges.
* Expired during 1991.

14. Electricity Trade Between Canada and the United States[a] (By Province, Gigawatt Hours)

PROVINCE	REGION / STATE	EXPORT (b)	IMPORT (c)	NET EXPORT (b) - (c)
New Brunswick	Maine	1344	56	1288
	Massachusetts	1744	0	1744
Total New Brunswick		**3088**	**56**	**3032**
Quebec	Vermont	1472	141	1331
	New England (d)	3223	374	2849
	New York	1089	92	997
Total Quebec		**5784**	**607**	**5177**
Ontario	Vermont	23	0	23
	New York	2183	663	1520
	Michigan	108	0	108
	Minnesota	0	51	-51
Total Ontario		**2314**	**714**	**1600**
Manitoba	Minnesota	3120	217	2903
	North Dakota	195	45	150
Total Manitoba		**3315**	**262**	**3053**
Saskatchewan	North Dakota	59	46	13
Alberta	Montana	0	3	-3
British Columbia	Montana	25	0	25
	Washington	739	0	739
	Oregon	1323	0	1323
	California	3029	0	3029
	Other (e)	152	0	152
Total British Columbia		**5268**	**0**	**5268**
TOTAL		**19828**	**1688**	**18140**

Notes: (a) Sales and purchases only; excludes exchanges.
(b) Sales to the United States.
(c) Purchases from the United States.
(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.
(e) Includes Idaho, Nevada and Alaska.

15. Electricity Trade Between the United States and Canada[a] (By American Region / State, Gigawatt Hours)

REGION / STATE	PROVINCE	IMPORT (b)	EXPORT (c)	NET IMPORT (b) - (c)
New England				
Maine	New Brunswick	1344	56	1288
Massachusetts	New Brunswick	1744	0	1744
Vermont	Quebec	1472	141	1331
	Ontario	23	0	23
New England (d)	Quebec	3223	374	2849
Total New England		**7806**	**571**	**7235**
New York	Quebec	1089	92	997
	Ontario	2183	663	1520
Total New York		**3272**	**755**	**2517**
Michigan	Ontario	108	0	108
Midwest				
Minnesota	Ontario	0	51	-51
	Manitoba	3120	217	2903
North Dakota	Manitoba	195	45	150
	Saskatchewan	59	46	13
Total Midwest		**3374**	**359**	**3015**
Western				
Montana	Alberta	0	3	-3
	British Columbia	25	0	25
Washington	British Columbia	739	0	739
Oregon	British Columbia	1323	0	1323
California	British Columbia	3029	0	3029
Other (e)	British Columbia	152	0	152
Total Western		**5268**	**3**	**5265**
TOTAL		**19828**	**1688**	**18140**

Notes: (a) Sales and purchases only; excludes exchanges.
(b) Purchases from Canada.
(c) Sales to Canada.
(d) Trade with the New England Power Pool - quantities to each state cannot be accurately determined.
(e) Includes Idaho, Nevada and Alaska.